THE OIL WEEKLY

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  By MICHAEL J. LEAHY
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INDEX TO ADVERTISERS

Ajax Iron Works 51
Allsteel Products Manufacturing Co. 3
Amerada Petroleum Corp. 132
American Chemical Co. 138
American Cast Iron Pipe Co. 194
American Lubricator Co. 136
American Meter Co. 17
American Roller Bearing Co. 167
American Sand-Banum Co. 207
Anderson-Prichard Oil Corp. 120
Atlas Supply Co. 111
Axelson Manufacturing Co. 173

Baker Oil Tools, Inc. 19
Wm. M. Barret, Inc. 203
Big Lake Oil Co. 124
Bridgeport Machine Co. 152
Broderick & Bascom Rope Co. 59
Buckeye Traction Ditcher Co. 134
Brown Tool Co. 118
Bull-Stewart Equipment Co. 91
Butler Manufacturing Co. 8
Byron Jackson Co. 45

Cameron Iron Works 89
The Cavins Co. 208
Jo H. Cable 203
Cardova Union Oil Corp. 144
Carson Machine & Supply Co. 53
Chemical Process Co. 133
Chiksan Oil Tool Co. 192
The Continental Supply Co. 135
The Cooper-Bessemer Corp. 156-157
Cosden Petroleum Corp. 126
Crane Co. 39
W. H. Curtin Co. 22
Cummins Engine Co. 81

Danciger Oil & Refineries, Inc. 142
Darling Valve & Manufacturing Co. 203
David Donoghue 203
Davidson Drilling Co., Inc. 128
The Dayton Rubber & Manufacturing Co. 15
Diamond Chain & Manufacturing Co. 196
Dickson-Moore Corp. 130
Drane Tank Co. 129

Eastland Oil Co. 128
Elliott Core Drilling Co. 95
Emsco Derrick & Equipment Co. 139

First National Bank in Houston 163
First National Bank & Trust Co. 122
Edwin H. Fitler Co. 130
Fluid Packed Pump Co. 177
Fort Worth Clearing House Assn. 113
Fort Worth Laboratories 203
The Four Wheel Drive Auto Co. 4
Frick-Reid Supply Corp. 84-85

Gardner-Denver Co. 11
Gas Lift Corp. 199
Gaso Pump & Burner Manufacturing Co. 5
Geological Scientific Service Co. 203
Geophysical Service, Inc. 61
The B. F. Goodrich Co. 20
Goodyear Tire & Rubber Co. 63
H. P. Gott Manufacturing Co. 200
The Guiberson Corp. 100-101
Gulf Coast Machine & Supply Co. 13
Gulf States Utilities Co. 186

Halliburton Oil Well Cementing Co. 137
Hardway & Cathey 203
Hazard Wire Rope Co. ..... Third Cover
Hercules Tool Co. 121
Hewitt Rubber Corp. 143
Hinderliter Tool Co. 54-55
Hoard Exploration Co. 203
Hughes Tool Co. ..... Insert 130-131, Back Cover, 16

Ideal Bailer Co. 22
Independent Exploration Co. 171
The Inferno Co. 201
International Derrick & Equipment Co. 71
International Harvester Co. 41
International Supply Co. 119
Iverson Tool Co. 108

Byron Jackson Co. 45

The Kennedy Valve Manufacturing Co. 193
Kibele Manufacturing Co. 183

The Lane-Wells Co. 158
Larkin Packer Co. ..... Second Cover
Layne & Bowler Co. 204
LeRoi Co. 47
Link-Belt Co. 92-93
Neal Lucey Co. 202

Maintenance Engineering Corp. 191
Maloney Tank Manufacturing Co. 57
Martin-Decker Corp. 187
Philip Maverick 138
Wm. H. McDonald, Commissioner 202
Merco Nordstrom Valve Co. ..... Insert 18-19
Me-Tex Supply Co. 116
Metric Metal Works 17
Mid-Continent Supply Co. 72-73
Midland Chamber of Commerce 112
Miller Sand Pump Co. 209
Mission Manufacturing Co. 24
Robert Muldrow III 138

National Bank of Tulsa 105
The National Supply Co. 43
Naylor Pipe Co. 79
New Weston Hotel 201
Norvell-Wilder Supply Co. 68-69

Walter O'Bannon Co. 208
Oil Well Supply Co. 23
Oil-World Exposition 87
Osage Metal Co. 188
Otis Pressure Control 88

Patterson-Ballagh Corp. 14
Pelican Well Tool & Supply Co. 190
Petroleum Rectifying Co. 18
Petty Geophysical Engineering Co. 98
Pittsburgh Equitable Meter Co. ..... Insert 18-19
The Producers Supply & Tool Co. 195

Rector Well Equipment Co. 49
Reed Roller Bit Co. ..... First Cover, 114-115
The Republic Rubber Co. 67
R-F Electrical Manufacturing Co. 196

San Jacinto Inn 202
Jack A. Schley 203
Schlumberger Well Surveying Corp. 107
Seagraves Chamber of Commerce 155
E. M. Smith Co. 195
Spang & Co. 106
Spang, Chalfant & Co. 12
South Texas Geophysical Corp. 83
Sun Oil Co. 131

Texas Electric Service Co. 109
Texas Electric Steel Castings Co. 127
Texas Iron Works 103
Texas Pacific Coal & Oil Co. 118
Texas Steel Co. ..... 145 to 151
Thermoid Rubber Co. 10
Edgar Tobin Aerial Surveys 172
The Travelodge Corp. 134
Trinity Portland Cement Co. 9

United Rig & Equipment Co. 65
United States Rubber Co. 7
United States Steel Corp. 23
United Supply & Manufacturing Co. 104

Wailes Dove-Hermiston Corp. 179
Well Machinery & Supply Co. 117
Western Oil & Royalty Co. 108
West Texas Utilities Co. 125
The Wheland Co. 6
Wickwire Spencer Steel Co. 123
J. H. Williams & Co. 110
Williamsport Wire Rope Co. 75
Wilson Manufacturing Co. 76-77
Wilson Supply Co. 175
W-K-M Co. 165

Youngstown Sheet & Tube Co. 141

Zingery Map Co. 96

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LOOKING AHEAD

WITH THE EDITOR

New Operating Practices for West Virginia . . .

Pipe Line Diesel Engine Care . . .

South Texas Austin Chalk Revived . . .

OPERATING problems new to West Virginia have been created by the development of commercial gas production in the Oriskany sand. The formation is deeper than heretofore productive in the region, and while it has not been excessively troublesome from this standpoint, the necessity of penetrating a cavey formation has presented difficulties of major proportion in several instances. The outstanding problem, state R. P. Walsh and J. E. Billingsley in an article in the next issue, has been due to higher pressures, which coupled with a flow usually restricted to a small amount, has caused a constant struggle against freezing. Several interesting practices have been evolved in combatting this condition, and considerable progress has been made. They are described in detail in the article.

ONCE pipe line Diesel engines have been installed, the only way to stretch their period of usefulness and overhaul intervals, is by proper maintenance. Time spent in intelligent care will add profit to pipe line operations by reducing the frequency of breakdowns, and prolonging the service of the engines. While no set rule may be established, it is usually true that the more frequent the scheduled inspection and care, the less likely is a service breakdown, and the longer the ultimate life of a Diesel. A number of hints for the proper maintenance of Diesel are discussed in an interesting and well illustrated article to appear next week.

REVISED operating methods have made Austin chalk production an important factor in South Texas reserves. After being dormant for a number of years, improved practices have completely revived. No single change accounts for the increased recovery, but it is a general improvement in drilling and completing.

THIS WEEK

» THE FIRST SAMPLE of oil from the new discovery well at Venice, Plaquemines Parish, Louisiana Gulf Coast, is being obtained by a member of the crew as the flow is turned into burning pits. The well, Tide Water Associated Oil Company's Manhattan Fruit Company 3, flowed nine barrels hourly of 38 gravity oil through 5/32-inch choke from Miocene sands. The output increased to 22¾ barrels per hour when the choke was enlarged to 3/16 inch.

FORESEEING a record demand for gasoline during August, the Bureau of Mines has recommended that United States daily crude production in August be 3,462,900 barrels. This is 39,100 barrels higher than recommended in July, and 395,500 barrels greater than actual production in August, 1936. However, it is still beneath the level crude production has been averaging recently, and which has caused additions to stocks. **Page 10.**

THE August allowable for Texas has been set at 1,495,491 barrels by the Texas Railroad Commission. This figure is 100,000 barrels higher than recommended by the Bureau of Mines, and 110,000 barrels greater than the July allowable. This indicates that United States crude production will be at a peak in August, and will increase more than consumption. Therefore, it is to be anticipated that crude stocks will be enlarged, which is what the commission thinks should take place. **Page 10.**

IN THE courts last week, a defendant in the Madison anti-trust suit lost in his first battle to prevent removal to that city for trial, and a court of appeals reversed a pipe line judgment in which a Texas county sought to collect al valorem taxes. The latter apparently opened the way for collections. **Page 13.**

PRESIDENT ROOSEVELT on July 22 asked Congress to enact legislation extending the Interstate Oil Compact for another two years. Immediately after the President's message, a bill was introduced for this purpose. It is anticipated that Congress will be agreeable to enacting the measure, and it will get early action. **Page 12.**

CURRENT SITUATION

(Latest Available Weekly Data)

Outlook.—Unsettled.

Crude Market.—Firm.

Refined Oil Markets.—Gasoline prices unchanged.

Crude Production. — 3,586,775 barrels daily, a new peak.

Crude Runs to Stills.—Up 90,000 barrels to 3,415,000 daily.

Crude Stocks.—Continue rising .

Gasoline Stocks.—Down 1,430,000 barrels to 72,546,000.

Gas and Fuel Oil Stocks. — Up 1,548,000 barrels to 105,085,000.

Drilling.—Completions last week 646; up 40.

See* MARKET SECTION *for Details

MALODORANTS must be injected into all gas used for domestic fuel purpose in Texas, according to a recently enacted law. This has started many problems in both chemistry and mechanics of the gas company engineer. After determining what to use and its cost, a problem of procuring a sufficient quantity arises. Then comes the question of devising a means for injecting and mixing it with the gas in the right proportion. **Page 32.**

THE first of two articles on the development of the deep Oriskany sand in West Virginia appears in this issue. Present indications are that in excess of 50,000 acres have been proven, and that they will yield 4,000,000 cubic feet of gas each, or a reserve in excess of 200,000,000,000 cubic feet. This is twice the amount of gas sold annually from the entire state during the past three years. It is therefore evident that the development is of considerable consequence. Moreover, it opens production possibilities over a much larger region. **Page 15.**

HOW well you treat your boiler, both inside and outside, largely determines its service life. These massive units are much more sensitive to operating conditions than generally recognized. The strength and safety factors built into the modern boiler prompt many operators to expect the impossible in both performance and resistance to abuse. It is said that the average service life of many boilers is but little more than half that which would be recorded if given the care they deserve. There are many common boiler abuses, but it is not difficult or expensive to eliminate most of them. **Page 21.**

Production Allowables

Record crude yield likely to offset August's peak consumption and increase stocks . . . Bureau jumps estimate of nation's needs . . . Texas sets allowable 100,000 barrels higher than bureau recommends.

ALTHOUGH August should see gasoline consumption reach the highest level in history, indications are that considerable oil will be run to storage during the month. This will be the result of crude production probably attaining a record output, and one sufficiently higher than the demand increase to cause additions to stocks.

These conditions are indicated by actions that took place last week. These were:

First, the Bureau of Mines release of its regular monthly forecast of consumption and recommended production allowables. This report estimated that 3,462,900 barrels of crude would be required daily to meet a record gasoline demand. This is 39,100 barrels higher than recommended by the bureau in July, and 395,500 barrels per day greater than the actual production in August a year ago.

Texas Exceeds Bureau

Second, the Texas Railroad Commission announced the establishment of its August production allowable, and it was 100,000 barrels higher than the bureau recommended, and 110,000 barrels greater than the basic allowable set by the commission for July.

With such a large increase to be expected in Texas, the largest producing state in the United States, it is to be expected that crude production will far exceed the recommended quota of the bureau. This, coupled with the fact that crude stocks have been increasing for several weeks, indicates that additional petroleum will go to storage, despite the fact that there should be an all-time high in consumption.

Others to Adhere to Quota

Indications are that the estimate of the United States Bureau of Mines will be written into an order by the Oklahoma Corporation Commission as the allowable in crude oil production for August. The estimate, 633,400 barrels daily, is an increase of 3700 barrels over the allowable for July. No date for the hearing to determine Oklahoma's August allowable has been announced.

The hearing before the State Corporation Commission of Kansas, to determine August allowable in that state, will be held in Wichita, July 28. The estimate of the United States Bureau of Mines for August production in Kansas is 200,500 barrels daily. If the figure becomes the order for the month it will mean an increase of 4900 barrels daily over the July order.

August Recommendations

Crude oil production during the five weeks May 29 to July 3 averaged about 3,546,000 barrels daily, the bureau pointed out. During the period, crude oil stocks increased 2,299,000 barrels net, of which 2,104,000 barrels were in domestic grades, indicating a daily domestic demand at the time of 3,486,000 barrels.

Domestic demand for motor fuel next month is forecast by the bureau as 52,600,000 barrels, or 14 percent higher than the actual demand for the "abnormally low" August, 1936. Exports of motor fuel have been estimated at 2,900,000 barrels, or 100,000 barrels above the current month.

"Stocks of finished and unfinished gasoline amounted to 79,677,000 barrels on May 31, 1937," the bureau commented. "According to the American Petroleum Institute, gasoline stocks were reduced about 3,150,000 barrels during June, which would place stocks on hand June 30 at 76,527,000 barrels. The bureau's estimated reduction for July of 5,300,000 barrels would bring this figure to 71,227,000 barrels as of July 31. The bureau estimates a stock reduction of 5,000,000 barrels for August."

With benzol and direct sales and losses of natural gasoline estimated at 1,100,000 barrels, making the necessary production of gasoline 49,400,000 barrels, or 1,594,000 barrels daily, the bureau recommends that activities in the several refining districts be geared during August to the following basis: East Coast, 6,960,000 barrels; Appalachian, 1,820,000 barrels; Indiana-Illinois, 8,520,000 barrels ; Oklahoma, 3,260,000 barrels; Kansas-Missouri, 3,010,000 barrels; inland Texas, 3,930,000 barrels; Gulf Texas, 11,590,000 barrels; Gulf Louisiana, 1,560,000 barrels; north Louisiana-Arkansas, 930,000 barrels; Rocky Mountain, 1,210,000 barrels; California, 6,610,000 barrels.

Natural gasoline consumption at refineries during the coming month is figured at 6.4 percent of the total gasoline required, or 3,160,000 barrels. The yield of straight-run and cracked gasoline is estimated at 45.267 percent which, when applied to the estimated straight-run and cracked gasoline production of 46,240,000 barrels gives refinery requirements as 102,150,000 barrels, a daily average of 3,295,000 barrels. Foreign crude runs to stills is estimated at 2,900,000 barrels, the same as estimated for July.

In addition, exports of crude have been estimated as 5,200,000 barrels, the same as for this month, and the estimate for crude burned as fuel and losses also is unchanged at 2,900,000 barrels.

On the basis of these factors, the bureau foresees as necessary a daily average production of 3,462,900 barrels for August, and recommends allocations among the states as shown in Table 1.

TABLE 1
Estimate of Required Crude Oil Production by States[1]
(Daily Average in Barrels)

STATE	Forecast August, 1937	Forecast July, 1937
Texas	1,395,200	1,375,100
Oklahoma	633,400	629,700
California	612,800	605,500
Louisiana	253,900	253,000
Kansas	200,500	195,600
New Mexico	100,800	100,800
Pennsylvania	53,600	53,700
Wyoming	52,800	52,900
Michigan	39,900	39,800
Arkansas	29,100	28,400
Montana	17,700	16,200
Kentucky	16,800	16,100
New York	15,200	15,600
Illinois	13,000	13,000
West Virginia	10,700	10,700
Ohio	10,300	10,700
Colorado	4,900	4,700
Indiana	2,300	2,300
	3,462,900	3,423,800

[1] The amounts in this table have been calculated as the requirements for the months stated and are not intended to be calculations of daily average demand for the current year or for any period other than the months stated.

Texas Allowable Order

While the Texas Railroad Commission in fixing the state's allowed output at 1,495,491 barrels daily in August, exceeded the Bureau of Mines estimated consumer demand for the state by 100,291 barrels and increased its allowable 100,015 barrels over the July figure, the new allocation is 161,822 barrels per day less than nomination filed by purchasers of Texas crude, which totaled 1,657,313 barrels.

Commission records disclosed that from the time July proration schedules were completed until July 17, the allowable had increased 37,797 barrels due to completion of 619 new wells. Thus the commission, apparently determined to take as large a market for Texas as possible, ordered a net increase over July 17 of 72,218 barrels daily, as indicated in Table 2.

Terrell Explains

C. V. Terrell, chairman of the commission, issued the following explanatory statement with the order:

"The report of the Survey of Crude Oil in Storage (see THE OIL WEEKLY, July 19) just completed by the Bureau of Mines shows that there is in storage in the United States above ground as of May 31, this year, 308,000,000 barrels of oil. Of this amount, however, it takes about 100,000,000 barrels to fill the pipe lines, gathering systems, tankers en route, and working stocks at refineries, actually leaving only about 200,000,000 barrels of crude for our needs for refining purposes, or just a little over 60 days supply.

"Then, further, it should be consid-

ered that the bulk of these 200,000,000 barrels is in the hands of a few strong companies. It is not the policy of the law or of the Railroad Commission of Texas to make oil scarce in order to make it high. The law specifically charges us with protecting the consumer of gasoline.

"We feel that a critical point has been reached in storage of Texas oil. For example, the Bureau of Mines report shows that Oklahoma has oil of its origin stored of sufficient amount to meet 133 days of their demand, whereas Texas has only 93 days supply in storage to meet the demand for Texas oil. It was felt that Texas should be more nearly in line with Oklahoma with regard to day's supply.

"Consumption has been increasing by leaps and bounds. It will take 90,000,000 barrels of burner distillates to furnish fuel for the 1,500,000 heating installations. More are going in all the time. We feel that the time to give our producers of oil an opportunity to increase their production is during the heavy consumer season. This is that season.

"Therefore, we have stepped up our production slightly for the purpose of protecting the consumer and to replenish our depleted stocks."

Reaction May Be Unfavorable

While it appeared that the commission had finally achieved its announced objective of raising the market for Texas oil to 1,500,000 barrels daily, and to which Texas may be entitled because of its huge potential, and that the majority of producers were greatly pleased, there were some who feared that hopes for a raise in the price of crude oil this summer had been killed. On the other hand, it was indicated that the commission thought it might be charged with favoring producers if the crude price was raised.

State Hearing Indicated Raise

The large increase in the Texas allowable ordered by the Texas Railroad Commission was predicted in the statewide proration hearing held in Austin, Monday, July 19. Commissioners Thompson and Terrell indicated they felt Texas was entitled to a larger place in the national oil market, and inferred operators would have allowables increased if a proper showing were made.

Thompson had just returned from the meeting of the Interstate Oil Compact Commission held at Santa Fe, Mexico (See THE OIL WEEKLY, July 19)

[*Continued on Page 44*]

Legislative Actions

Roosevelt asks for interstate compact enactment and Thomas introduces bill . . . California busy

Compact Action

CONGRESSIONAL consent to the two-year extension of the interstate oil compact, approved by the five participating states on May 10, last, was recommended to Congress by President Roosevelt in a special message July 22 and appropriate legislation was immediately introduced by Senator Thomas of Oklahoma.

The new compact was brought to Washington May 31 by Colonel Ernest O. Thompson of the Texas Railroad Commission, and submitted to the White House from whence it was referred to the state department for consideration. Approval of the compact by the department was followed by its submission to Congress.

The president's message was brief, merely outlining the history of the compact and commenting that the secretary of the interior had expressed the opinion that "some good may be accomplished" by the agreement.

Thomas Introduces Bill

With his resolution providing for congressional approval, Senator Thomas issued a statement of explanation in which he declared that the compact "has made possible a sane conservation of the nation's petroleum resources, has enabled the oil-producing states to correlate their laws and has proven an important economic factor in developing prosperity throughout the petroleum states.

Senator Thomas, mindful of the charges brought against the Connally contraband oil act and the compact, stressed that nothing in the latter authorizes the participating states to limit the production of oil or gas in order to stabilize or fix prices or to create a monopoly or to promote regimentation.

"The sole purpose of the compact is to authorize collective action for the conservation of oil and gas and the prevention of avoidable waste," he asserted.

"Conservation of our petroleum resources cannot be accomplished either by the industry alone or by any single oil-producing state. Cooperative action is required. The industry cannot attempt such cooperative effort alone, on the other hand, the oil states themselves cannot join together for action unless congress consents.

"The substitution of cooperative action through which there will always be available an adequate supply of crude petroleum sufficient to meet the consumptive demand, for an illogical and suicidal race for production without any reference to a proportionate share of the total amount to which a state is legitimately entitled seems a desirable achievement," he said.

As congressional leaders are now planning for an early adjournment of the session, it is expected early action will be sought on the extension legislation. In view of the fact that little difficulty was encountered in securing extension of the Connally contraband oil act, designed to support the state conservation laws, it is not anticipated any difficulty will be laid in the path of the compact to which, in effect, the Connally law is complimentary.

New California Laws

Culminating a bitter fight during the recently adjourned and past sessions of the California legislature, there now is a law providing for the development of state owned oil lands at Huntington Beach. Assembly Bill 2090, the O'Donnell Act, was approved by the governor and becomes effective August 27, 1937. The measure provides for competitive bidding for 11 parcels, comprising approximately 120 acres each, in the Huntington Beach area. Bids are to be made on the basis of the highest royalty offered the state, with a minimum, however, set at 30 percent on all production in excess of 200 barrels per day per well; 40 percent in excess of 1000 barrels per day per well, and 50 percent in excess of 2000 barrels per day per well. The O'Donnell Act, it is assumed, will supersede the Olson law, S. B. 579, approved by the governor during the recent session of the legislature.

The governor approved S. B. 986, offered by McBride, which will permit the operators of oil and gas wells to deduct from royalty payments, or payments to interest holders in any such well, the proportionate amount properly chargeable to that royalty or interest for the maintenance of the Division of Oil and Gas.

Three bills were approved, and will be effective August 27, relating to marketing practices of the oil industry. Senate Bill 963, proposed by DeLap, provides that the commodities sold through vending machines shall be subject to the provisions of the "Fair Trade Act." Senate Bill 971, Wagy, strengthens the "Oil Substitution Act" which should result in better enforcement thereof. And Assembly Bill 3, Boyle, strengthens the "Unfair Practices Act" and should curtail selling of commodities at a price below cost.

TABLE 2

Texas Allowable for August by Districts

DISTRICT	Allowable Effective July 1	Allowable Effective July 17	Allowable Effective August 1	Increase on August 1
East Texas	466,000	469,409	470,734	1,325
Panhandle	79,000	79,413	81,400	1,987
North Texas	61,675	62,441	64,440	1,999
West Central Texas	67,848	71,302	71,302	No change
West Texas	177,040	183,947	213,498	29,551
East Central Texas	82,601	86,574	87,124	550
Rodessa	36,048	37,718	37,718	No change
Southwest Texas	221,973	230,731	246,826	16,095
Gulf Coast	193,291	201,738	222,449	20,711
Total	1,385,476	1,423,273	1,495,491	72,218

Proration Matters

Arkansas holds Rodessa hearing . . . Texas issues new field regulations and has several hearings.

THE most important proration matters of the week were release of the Bureau of Mines August production recommendations and the Texas statewide hearing and proration order (see "Production Allowables" this issue), but Texas had other affairs under consideration, and Arkansas and Kansas were studying field proration orders.

In Texas a number of field hearings were held and several orders issued. Arkansas conservation officials heard testimony on the Rodessa extension area in that state, and Kansas was considering the Hauschild field.

Arkansas Hearing Held

The Arkansas Board of Conservation meeting last Tuesday at El Dorado, heard recommendations that the same rules in force on the Louisiana side of the field be applied to the Arkansas extension in Miller County, which was recently opened by a well producing from the Gloyd horizon.

The board announced that its decision on rules will be announced on August 2. H. W. Bell, in charge of the engineers committee of the Rodessa Operators Committee, suggested a 40-acre space rule for the extension. The present space is 10 acres. T. W. Johnson of United Gas Public Service Company's engineering staff, displayed charts showing how gas waste has been reduced on the Louisiana side of the field by application of a 75 percent acreage, 25 percent bottom-hole pressure factor. H. H. Haper of East Texas Refining Company discussed the casing rules he thought were suited to the field.

Eight tests are now making hole in the Miller County extension, deepest of them being below 4500 feet. W. L. McClanahan's Capps 1, Section 11-20-28, the ertension producer, made 460 barrels in 24 hours late last week.

Hauschild Physical Test

Further physical tests of some wells in the Hauschild pool, Rice County, have been asked by the Kansas Corporation Commission, which will write a final order of proration. Some tests were made between June 22 and June 25, and the commission held a hearing July 19 to determine new rules. The evidence, however, indicated that other producers should take tests, which will be followed out between July 26 and July 30.

Postpone Well Status Reports

The Texas Railroad Commission has advised its deputy supervisors in the field that monthly EB reports may be accepted without the information required under the head "Detailed Well Status Report."

The commission issued an order on July 1 requiring the well status report. Since that time numerous protests have been received from operators throughout Texas who declare it is impractical for them to conform to the new requirements.

The commission has agreed to call a conference of representatives from the oil companies who will meet with commission officials to discuss revision of this report and to attempt to eliminate duplication of data which is contained in the various reports required under prior orders.

It is likely that the matter will be discussed at a hearing before the commission takes final action and that new orders will be issued as quickly as a thorough check has been made.

That the commission suspend its enforcement of the "well status" report was requested at the statewide hearing by Jake Hamon, president of Mid-Continent Oil & Gas Association. He asked that a hearing be held and operators given an opportunity to discuss with the commission the difficulties with which they were confronted before the order should be enforced. He pointed out that some duplications could be eliminated from all commission forms, and suggested that this conference include all reports now required under commission orders.

Texas Field Rules Issued

A number of rules governing spacing and operating practices in several fields were issued by the Texas Railroad Commission last week.

Long Lake Field

An order has been issued increasing the maximum gas-oil ratio for wells in

[*Continued on page 43*]

Pipe Line News

Plan 160-mile South Louisiana line . . . Magnolia quits Borger area . . . Short Michigan oil line.

OUTSTANDING in the pipe line news last week was announcement of the construction of a $1,500,000 system in southern Louisiana, which will provide needed outlet for growing production in several Gulf Coast fields.

South Louisiana Line

Work of surveying and procuring right-of-way for a welded pipe line from Standard Oil Company of Louisiana's tank farm on the west bank of the Mississippi River at Baton Rouge, where the company has a refinery, to the Roanoke field, near Jennings in Louisiana Gulf Coast, will begin next week. Bids are being taken for the work.

Plans call for 25 miles of 10-inch, 63 miles of 8-inch and 72 miles of 6-inch line. Besides the main line to Roanoke, there will be branch lines to the New Iberia and Jeanerette fields.

The line will give the company's Baton Rouge refinery its first direct conection to South Louisiana fields.

The project will receive a 10-year tax exemption given to new industrial operations coming into Louisiana.

Michigan Oil Line

Naph-Sol Refining & Pipe Line Company has started construction of 21 miles of 4-inch welded line from Buckeye field, Gladwin County south to Coleman, Michigan, where crude shipments will be made via railroad tank cars. The Coleman terminal was decided on due to advantageous shipping rates over the closer Gladwin and Beaverton terminals.

The line will have a capacity of 6000 barrels and will be used chiefly at the present to serve Rex Oil Company, an affiliate, leases in Buckeye. Naph-Sol Refining & Pipe Line Company operates a refinery at Muskegon, Michigan.

Shamrock Pipe Line Corporation has the construction contract. The line is to be placed in service about August 1.

Withdraws as Buyer

Magnolia Pipe Line Company has withdrawn from the Borger section of the Panhandle as a transporter of crude, and is salvaging about 23 miles of 6- and 4-inch lines. The company was handling about 360 barrels of oil daily through this unit, and well connections have been switched to Phillips Petroleum Company.

Sinclair Refining Company, pipe line division, is removing about 37 miles of 4-inch lines in eastern Gray County, and is also stripping its Kingsmill trunk line station of an auxiliary pumping unit. The pipe and equipment will be shipped to West Texas for use in expanding the facilities of the Texas-New Mexico Pipe Line Company, which is now owned jointly by four majors, including the former.

Taking Up Line

Houston Oil Company has taken up its 15-mile, 6-inch crude line, built during the early development of the East Texas field from Kilgore area to rack and tank farm at Omega, near Winona. Two 80,000-barrel tanks at the latter farm and the salvaged pipe will be used by the company in the Silsbee field of Texas Gulf Coast.

Labor Situation

Two unions break further apart . . . CIO grows in Oklahoma . . . CIO says Pure Oil unfair . . . Strike has crippled Mexican concern.

A FURTHER break between the two union forces of the nation, claims of CIO growth in Oklahoma oil fields, and citation of another company for alleged unfair practices were the labor developments of the week.

AFL to Fight CIO

The American Federation of Labor's (A. F. of L.) executive council will meet August 21 at Atlantic City to prepare plans for a fall campaign against the CIO. While this does not directly apply to the oil industry, indirectly it is of much importance, as both unions are attempting to obtain leadership in the oil industry, with CIO making the most active drive at present.

William Green, head of AF of L, declared that membership of his union had increased rapidly since 10 rebel CIO unions were suspended last September. On July 1, he said, the total was 3,091,000, or 652,000 above the total for August 31 last year. Suspension of the 10 rebel unions cost the AF of L nearly 1,000,000 members. The CIO claims a membership of 3,000,000.

CIO Grows in Oklahoma

The Committee for Industrial Organization (CIO) last week declared they were well pleased with the progress made in obtaining members in the oil fields of Oklahoma. However, they refused to discuss figures. Since the beginning of the drive, the number of labor contracts held by CIO with oil concerns in the state has increased from 27 to 41.

Pure Oil Cited

J. L. Coulter, vice president of the CIO oil workers' union, declared last week he would prefer charges against The Pure Oil Company with the National Labor Relations Board. Earlier an announcement was made that the company had signed a contract with an employes federation at the Muskogee, Oklahoma, refinery.

Coulter was to make the following allegations in his petition: That on June 18, CIO filed a petition with the labor board, asking for a special election, but that the "company decided to head off an election by recognizing this organization of their own."

George Yost, superintendent of the refinery, has declared that the employes federation had proved it constituted a majority of the number.

Humble Contract Ready

Humble Oil & Refining Company, which already has signed contracts with employe federations representing its pipe line and production departments, may shortly do so with its refinery workers. Plans for the organization of an employe federation at its Baytown, Texas, refinery have been well formulated, it is stated. A committee representing the employes is expected to shortly petition the company's management for recognition.

48-Hour Canadian Week

Over the objections of operators and despite petitions signed by 350 oil field workers, the provincial government of Alberta last week instituted a 48-hour week for workers in the Turner Valley oil field. Hon. Ernest C. Manning, acting premier and minister of trade and industry, says it becomes effective August 1.

The 48-hour schedule will apply to all workers except head drillers and those persons engaged in trucking and transportation, who will be permitted to work up to 56 hours a week. The section of the Hours of Labor Act providing one day's rest in seven is waived insofar as truck and transport men are concerned.

Herbert Greenfield, Calgary, president of the Oil & Gas Association of Alberta, termed the order-in-council setting the hour-limitation to be "a direct contradiction to the agreement reached between Dr. W. W. Cross (minister of trade and industry) and myself, as representing the oil operators in Turner Valley. The understanding reached between myself, the Hon. Dr. Cross and his deputy minister some weeks ago was to the effect that whatever else was done in Turner Valley, the rights of drilling crews would not be interferred with. We haven't got the drillers necessary for such an arrangement."

Mexican Concern Crippled

Mexican Eagle Oil Company is considerably crippled by the current strike which workers assert is existing as a protest against the company for violating recently made contracts.

Thus far the strike has closed the company's two largest Mexican refineries, one in Mexico City and the other in Tampico, and has closed down the company's properties in Poza Rica field, costing Mexican Eagle Oil Company an estimated 60,000 barrels of crude production per day.

The workers and the company are attempting to settle the strike through the federal labor department, but local opinion sees no promise of immediate settlement of difficulties, some believing it is possible other units of the company may be tied up also.

Other companies against whom the general oil industry strike was called late in May (and extended into June) are deploring the Mexican Eagle situation. A statement issued said the trouble is working a hardship on consumers in central and western Mexico.

Oil in the Courts

Wisconsin federal court ruled to have jurisdiction in Madison suit . . . Texas pipe line tax suit reversed.

Hartman Loses Removal

WILLIAM V. HARTMAN, vice president of Gulf Oil Corporation, lost the first round of his fight to prevent removal to Madison, Wisconsin, for trial on charges of violating the anti-trust laws when Commissioner Roger Knox ruled the Wisconsin federal court had jurisdiction in the case. Attorneys immediately filed a writ of habeas corpus in federal district court and Federal Judge F. P. Schoonmaker set July 28 for a hearing.

Hartman is one of 71 individuals charged in two indictments returned by federal grand juries in Madison last year. Twenty-four companies and three trade journals are also under indictment. Trial is scheduled to start October 4. Pleas of not guilty have been entered at Madison on behalf of the companies and 67 of the individuals.

Ruling in the Hartman case will affect J. F. Drake, president of the corporation, and H. C. Meyer, district manager, who are also resisting removal at Pittsburgh. A fourth Gulf official, O. H. Carlisle, has been ordered removed by the federal district court at Houston, Texas, and has appealed his case to the Fifth Circuit Court of Appeals.

Texas Pipe Line Tax

The United States Circuit Court of Appeals at New Orleans set aside the injunction, granted by a district court, restraining the officials of Brown County, Texas, from collecting state and county ad valorem taxes on the county's declared part of the intangible assets and property of Atlantic Pipe Line Company.

The three judges reversed the judgment with costs and directed that the bill be dismissed. The district court held that intangible assets and property holders in Brown County "are systematically untaxed."

"On the whole, we think no clear case of discrimination is made as would warrant a federal court interfering by injunction," declared the circuit court appeal judges.

The Oriskany

By J. E. BILLINGSLEY, Geologist,
West Virginia Gas Corporation

DEVELOPMENT of the deep Oriskany sand, in West Virginia has assumed such proportions that The OIL WEEKLY feels that a special article or special articles, on the subject will be welcomed by the industry.

Consequently, arrangements have been made for two articles, of which the accompanying is the first. It is written by R. E. Billingsley, geologist for West Virginia Gas Corporation (Commonwealth Gas Corporation), and deals with the geology and economic aspects of this West Virginia development.

In the second article, which will appear next week, Mr. Billingsley and R. P. Walsh, general superintendent of West Virginia Gas Corporation, collaborate to discuss the operating problems involved. Drilling to 5,000 feet or more, with much greater pressures than have formerly been generally encountered in Eastern States, combine to bring about problems new to the area and some very interesting procedure has been developed by the operators.

The authors have had the complete cooperation of the various companies and individuals operating in this area, which cooperation is gratefully acknowledged.

PRIOR to the year 1930, the Oriskany sand in West Virginia was just the Ridgeley sandstone, and had no especial significance to oil and gas operators other than as a possible future productive horizon. In that year, a well being drilled by United Fuel Gas Company some eight miles directly south of Charleston, was dry in the upper sands and was continued to greater depths as an exploratory test. It reached the top of the Corniferous limestone (Onondaga in Pennsylvania and New York, and Columbus or Big Lime in Ohio) at 4530 feet, penetrated some 80 feet of lime and picked up the top of the Oriskany sand at 4610 feet. Here it developed a considerable amount of gas, 466,000 cubic feet on final test. Due to the fact that provision had not been made in the casing program for this sort of result, considerable difficulty developed, and the well was not allowed to rock up to its limit, which we now know would have been about 1300 pounds. It was turned into the line at once and delivered through the meter about 400,000 cubic feet of gas per day, which rate it maintained for more than four years.

This well is at the extreme southwest edge of what later became the Campbell Creek Oriskany sand field, and was the first commercial Oriskany sand well in the state. In fact it was the first well showing any gas in this formation in the state. For various reasons, among them the nearing depression, very little attention was paid to this discovery, although a number of wells had tested the horizon in earlier years with negative results and it had none the less been considered as a distinct possibility whenever deeper drilling was discussed by operators or geologists.

In 1932, Paul Grosscup, a local operator of the southern West Virginia area, drilled a well to the Oriskany sand on the headwaters of Coopers Creek, some eight miles north and east of Charleston. This resulted in a small gas well of perhaps 100,000 cubic feet capacity. He later drilled a second well a mile or more south of the first one, and a third some distance south of the second. Both of these wells were small gas wells in the Oriskany sand, similar to the first completion. It was apparent that he was moving down structure, and for the fourth test he moved to near the mouth of Coopers Creek at Elk River. This well was completed in the Oriskany sand as an oil well, with initial volume of about 100 barrels per day. Its production declined rapidly to an insignificant amount, but this well provided the impetus which resulted in the proper sort of exploratory drilling being put into effect. Incidentally, several dry holes and small gas wells were completed nearby, but no additional oil was developed, indicating that that found was a small amount trapped in the general fracture pattern covering this particular area.

In November of 1934, Godfrey L. Cabot, Inc., drilled a well to the Oriskany sand just south of Campbell Creek and east of Kanawha River, which opened the Campbell Creek field, and made this sort of drilling a worthwhile proposition. It had an initial open flow volume of about 2,000,000 cubic feet and a rock pressure of 1300 pounds.

In the meantime Columbian Carbon Company had

Sand of West Virginia

ITS EXTENT, GEOLOGY AND SIGNIFICANCE

been doing a considerable amount of geological work and had selected two areas as most attractive. The first was in part west of Kanawha River in an area now included in the Campbell Creek field, and in part east of the area adjacent to the Cabot well. The second was in the general area of Coopers Creek, west, north and northeast of the three small wells completed by Grosscup. In the first area, this company completed the second producer in Campbell Creek, good for 7,500,000 cubic feet and 1300 pounds. On its Coopers Creek acreage, in August, 1935, it completed Copenhaver 1 with an initial open flow of 2,600,000 cubic feet and 1900 pounds rock pressure, thus opening what is now known as the Elk-Poca field.

Some 5½ miles north and slightly west of this latter well, on the D. A. Griffith farm, and within a large block of acreage secured by him, William O. Ziebold located a well for a Big Lime test. He had worked out the structure in this vicinity on the top of the Big Lime (Greenbriar), on the Berea horizon and by convergence, on the top of the Corniferous lime. This structure seemed favorable in each instance. The well was dry through the Big Injun sand, and it, along with a considerable amount of acreage, was taken over by West Virginia Gas Corporation. The well was completed to the Oriskany sand by this company in April of 1936. It had an initial open flow of 6,900,000 cubic feet and a rock pressure of 1880 pounds, and opened what is known as the Grapevine area, now a part of the Elk-Poca field, but on a structural axis trending southwest, This company's second test, J. A. Cooper 1, was located approximately four miles southeast of the Griffith well and some 3½ miles northeast of the Copenhaver well of Columbian Carbon Company, and tested 3,782,000 cubic feet with a rock pressure of 1800 pounds, it also being within what is now the Elk-Poca field. These completions spread the apparently proven area over a large acreage, and are all shown on the map of the fields in Figure 1. From this time development has continued rapidly, greatly in excess of the present market demands. No additional new fields have been found, although a considerable amount of wildcatting has been done, most of it after proper geological and geophysical work by convergence and seismograph.

Geological Picture

On the map of West Virginia (Figure 2) is shown the extent of the Oriskany sand in so far as the state is concerned. It outcrops in the mountain area along

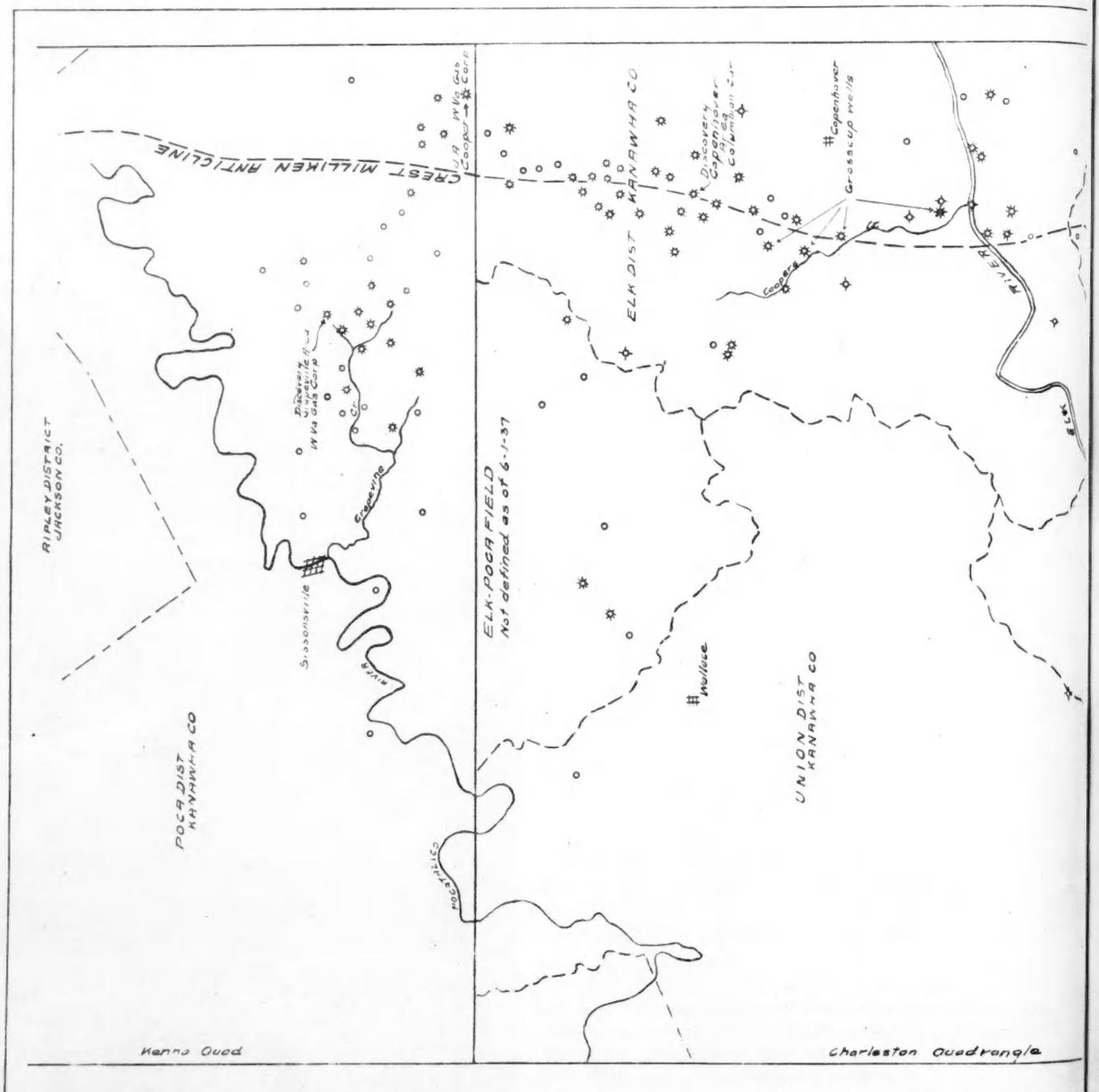
Looking southeast at the forks of Grapevine Creek in the Elk-Poca field. This scene illustrates the general topography of the district; it being hilly and wooded with cultivated patches interspersed.

the eastern border of the state and pinches out to the west and southwest at a depth of 3000 feet, plus or minus. It will be seen that the horizon is present over the larger part of the state, but that major development is confined to the Kanawha County area. So far no production has been found southeast of the Warfield anticline as it appears on the surface beds, it bearing northeast along the east side of the Campbell Creek field.

The sand itself is the top member of the Lower Devonian series, lying directly beneath the West Virginia Corniferous limestone and directly above the Helderberg group of limestone. In this latter group and near the bottom, is the Newburg horizon which is erratically productive over eastern Ohio, this in turn overlying the Medina horizons, of Silurian and Ordovician age, which furnish the Clinton sand in Ohio with its widespread commercial fields of both oil and gas.

The structure pattern on the surface beds and down to the base of the Berea sand (base of the Mississippian) is well-known and not complicated. The major fold of the Kanawha County area is the Warfield anticline, which beginning as a faulted zone in Mingo County at the Kentucky state line, quickly develops into a major fold and trends in general northeast through the central part of Kanawha County, continuing its plunging northeast course to the Pennsylvania state line as the Chestnut Ridge anticline. Bearing directly north from the northwest flank of the Warfield and at Charleston, is the Milliken anticline. The surface coals in the northern part of Kanawha County do not indicate

FIGURE 1



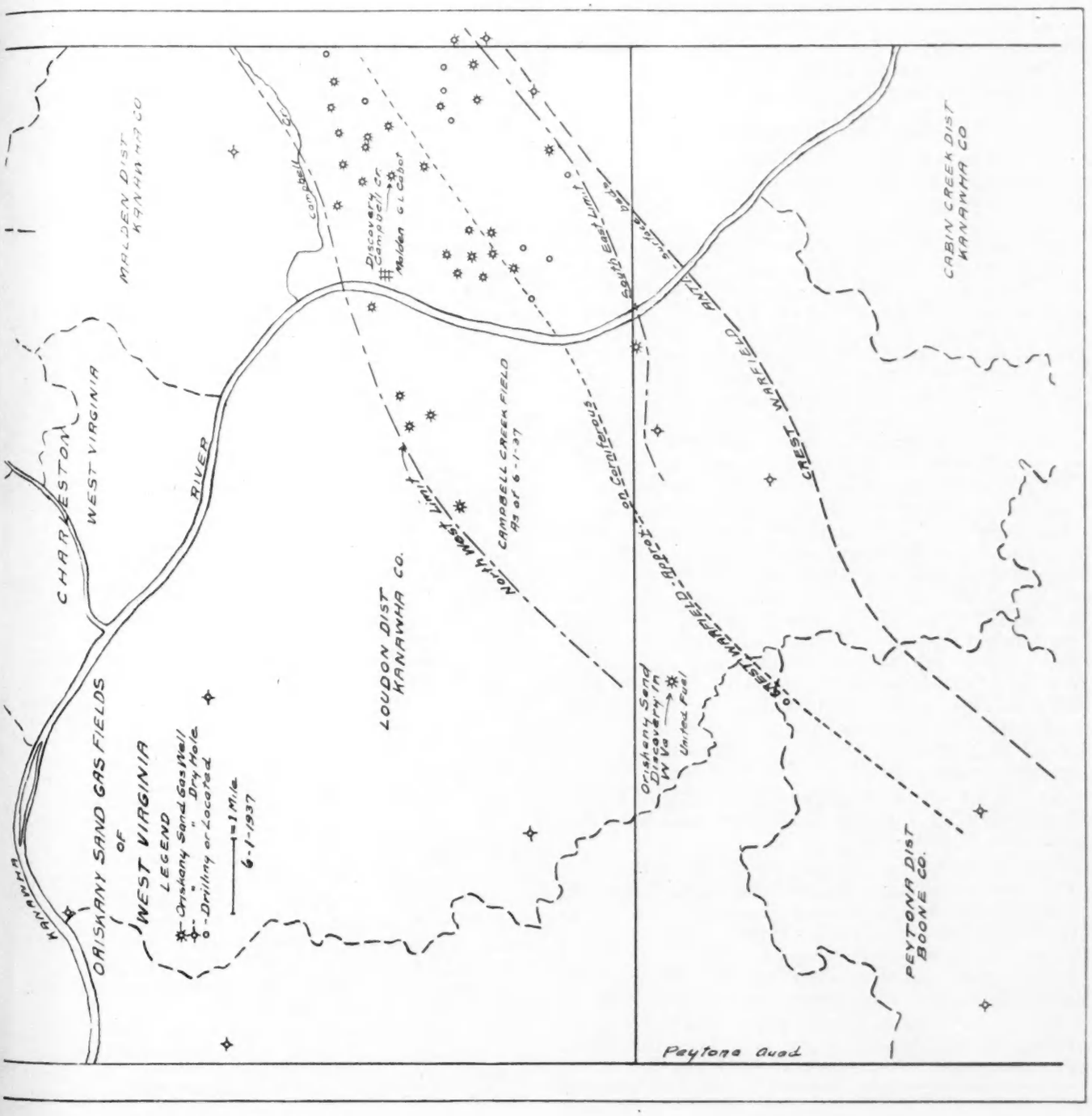
an anticline trending southwest from the north end of the Milliken, but subsurface work on the Berea sand or its horizon, does show this fold.

Drilling in the Campbell Creek area has shown that the Warfield or the Corniferous is a similar northeast plunging anticline, that it has terraced at this point and that its axis is located from one to two miles or more northwest of the surface axis. It has also shown that the Oriskany sand pinches out to the southwest, and that to the southeast, where porous, it carries a small amount of salt water and no oil or gas. Directly west and well down on the flank, the sand is tightly cemented, non-porous and non-productive.

Drilling in the Coopers Creek area, the Copenhaver area and northward in the Elk-Poca field indicates that this north trending and local Milliken anticline is practically identical both on the surface beds and on the Corniferous although the former is more pronounced. Eastward of the Milliken axis and down dip, the sand either loses its porosity or is broken, this opinion being based on one dry hole and one small gas well. However, no salt water or oil has been in evidence. It may be of interest here to note that in the Cooper well of the West Virginia Gas Corporation, the most easterly of the north group of wells, the Corniferous lime is approximately 130 feet lower structurally than in the wells of the Grapevine area, that its gas pay is in the lower part of the sand and that it has shown no indications of oil or water.

The Grapevine trend on the Corniferous, so far as drilling has gone, seems to conform with the like trend on the Big Lime (Greenbriar) and on the

FIGURE 1—Continued



Berea horizon. Whether or not it is displaced northwestward as on the Warfield is not yet apparent. However, this trend continues to the southwest beyond Kanawha River and seems to be a parallel plunging anticline, closing in the general Grapevine-Coopers Creek area into a distinct dome, which may at least partially account for the greater volume and rock pressure present than in the Campbells Creek area. It is apparently proven by drilling that this trend saddles southwest of the Elk-Poca field and in the vicinity of Kanawha River and that the Oriskany sand pinches out, so far as commercial production is concerned, before the river is reached. This is similar to the condition existing to the southwest of the Campbell Creek field.

As is to be expected, accumulation is controlled by structure in combination with porosity and in the areas structurally low, there is either a tightly cemented sand with no porosity or salt water is present in some amount. It is also apparent that the sand is not of any considerable porosity but is shattered, at least in many areas, and that a part of the accumulation is accounted for by reason of the reservoir space provided by this fracturing.

Economic Importance

In the sands known in West Virginia prior to the advent of the Oriskany, average initial open flow volume per well has declined during the past 10 or 15 years from more than one million cubic feet to less than three hundred thousand cubic feet. Markets during that time have greatly increased and drilling costs have also increased. As a result, the field price of gas, that is the price at the well, has increased and has remained for some years, at about 12 cents per thousand. This figure is possibly in some danger now locally, but the greatly increased cost of Oriskany sand drilling and the value created by the new reserve for domestic markets, should not justify any decrease in general field price. Should this occur, waste will result and there is apparent now some difficulty in opening new areas of production.

In the Campbell Creek field since November of 1934, there has been completed a total of 28 Oriskany sand gas wells with a combined initial open flow of approximately 57,000,000 cubic feet. In addition to this are the two wells completed prior to that date by United Fuel Gas Company, including the original discovery well. In the Elk-Poca field, since August of 1935, there has been completed a total of 56 Oriskany sand wells with combined initial open flow of 350,000,000 cubic feet. In addition to this are the four small Oriskany wells of Grosscup, drilled prior to August of 1935, which had a combined initial open flow of 511,000 cubic feet.

This is a total of 84 wells with a combined initial open flow of 407,000,000 cubic feet completed since November of 1934.

At this time, in the Campbell Creek field there are 10 wells drilling or located and in the Elk-Poca field, 41 wells drilling or located, a total of 51 in the two fields. Outside of the developed or partially developed areas but intended as Oriskany sand test, there are now six purely wildcat tests drilling. These figures on drilling activity are as of June 1, 1937.

Basing an opinion on the present extent of the area proven by drilling in the two fields, there has been developed in excess of 50,000 acres, which at 4,000,000 cubic feet per acre has provided a reserve of more than 200,000,000,000 cubic feet. This, according to the most recent estimates of the West Virginia Geological Survey, is twice the amount of gas sold annually from the entire state over the past three years. It is therefore quite evident that the development is of considerable consequence and it comes at a time when not only are new demands being made by an expanding market, but the old and developed fields and sands can offer nothing more than the small but consistently producing wells which the operators have been drilling for years.

In this connection it may be worth noting that this operation is due entirely to the activity of the smaller companies. The older and larger companies did not come into the acreage play prior to the actual discovery and their acreage representation in the two fields consists almost entirely of old leaseholds held by the shallow sands production and operated for many years.

Depth of Wells and Cost

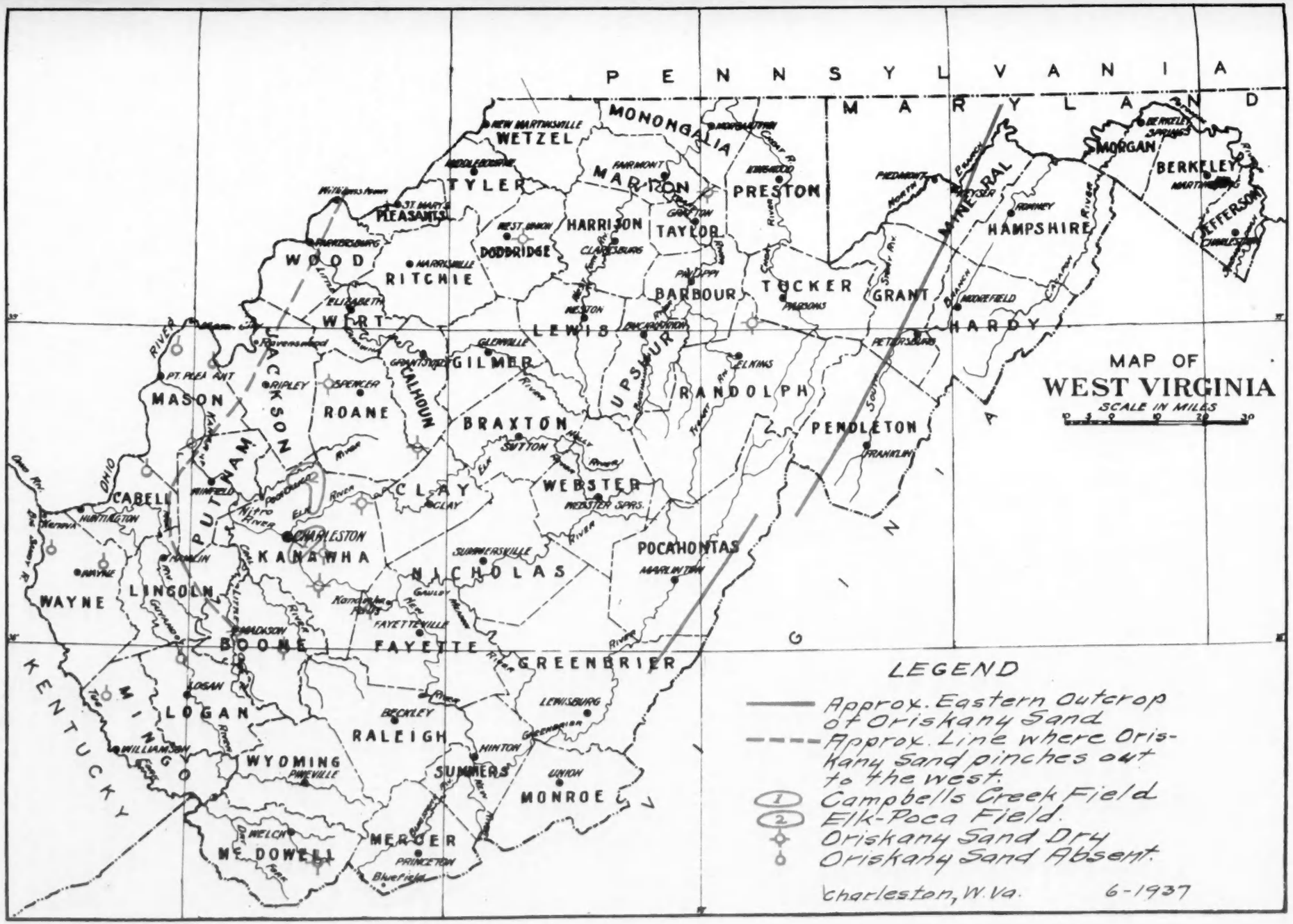
The average Oriskany sand well over and adjoining the developed area will complete at about 4800 to 5000 feet, and if productive will cost $25,000 or slightly more when shut in, especially if a gas separator and a bottom hole choke are installed. In addition to this will be the cost of gasoline tankage. All drilling has been done with standard cable tools and an average good run will use up about 100 days. While drilling problems are not within the range of this paper,* it may be said that the principal cause of delay in drilling, and the great concern of the drilling contractor, is the 2500 to 2800 feet of Devonian Shales lying between the base of the Berea sand and the top of the Corniferous lime. They cave readily, especially if anything over the minimum amount of drilling water is used.

Acreage and Ownership

The Campbell Creek field as at present outlined by drilling is about nine miles in length and about three miles in width at its widest point, with the major part of the drilling in the northeast half. Within the area which now seems proven, there are approximately 25 square miles or 16,000 acres. Of this perhaps one-half is owned by United Fuel Gas Company and South Penn Oil Company under old operated leaseholds. The balance of the apparently proven acreage is about equally divided between Columbian Carbon Company, United Carbon Company and Godfrey L. Cabot, Inc., also primarily a carbon company. These latter companies own large amounts of what now appears to be edge acreage, as does the Owens, Libbey-Owens Gas Department. Practically no other ownerships are represented in this field.

The situation in the Elk-Poca field is entirely different. This was an area considered depleted or worthless so far as the known sands were concerned, and during the depression years practically all unoperated acreage, and it is an area of relatively small tracts, had been surrendered. First to enter the field after its study of the structure was Columbian Carbon Company. It confined its early leasing to the east side of what is now the field, that is to say, the Milliken anticline area, and spread its acreage along the structure to the north and to the northwest, taking up all told probably 15,000 to 20,000 acres. West Virginia Gas Corporation, owning a small amount

*A subsequent article will deal with operating problems.


PENNSYLVANIA
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MAP OF
WEST VIRGINIA
SCALE IN MILES
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CALHOUN
JACKSON
PUTNAM
CABELL
WAYNE
LINCOLN
CLAY
WEBSTER
KANAWHA
NICHOLAS
POCAHONTAS
BOONE
FAYETTE
GREENBRIER
LOGAN
WYOMING
RALEIGH
SUMMERS
MONROE
MINGO
MCDOWELL
MERCER
KENTUCKY
OHIO
LEGEND
Approx. Eastern Outcrop of Oriskany Sand
Approx. Line where Oriskany Sand pinches out to the west.
1 Campbells Creek Field
2 Elk-Poca Field.
Oriskany Sand Dry
Oriskany Sand Absent.
Charleston, W. Va. 6-1937

of operated acreage, began leasing early, as did Brawley-Reed Company.

However, the largest ownership, aside from that of Columbian Carbon Company, was that of Ziebold, his total amounting to perhaps 14,000 acres spread over the Grapevine area and to the northeast and southwest. The major part of this was sold to West Virginia Gas Corporation and United Carbon Company, the latter being the larger purchaser and these sales taking place prior to the Griffith discovery on Grapevine Creek.

Major ownership of this field so far developed is therefore now in the following companies and roughly in order of acreage amounts: Columbian Carbon Company, United Carbon Company, West Virginia Gas Corporation, United Fuel Gas Company, Brawley-Reed Company and W. O. Ziebold, with many smaller ownerships among other operators.

This field is irregularly shaped, being apparently about 10 miles in its greatest length and 5 miles in its greatest width, with an undetermined area along its south and southwest edge apparently condemned. To the north, northwest and southwest it is not yet defined. There seems to be at least 40,000 acres proven, with the possibility that this may be greatly increased as drilling progresses in those directions not yet defined.

Geophysical Activity

The development of these areas brought about the first geophysical activity of consequence in West Virginia, and for the past two years one or more parties have been busy even through the winter weather. With the exception of the Copenhaver discovery on Coopers Creek of the Elk-Poca field, all discovery was the result purely of exploratory drilling based on ordinary geological investigation.

In the case of the Copenhaver well, this sort of work was checked and confirmed by the seismograph, and possibly in one other instance.

The original discovery, the Grapevine discovery, the Cooper well and the drilling of Grosscup, so far as the writer knows, were all based on a structural study without the use of any geophysical method. Where sufficient data were available, by the use of convergence from the top of both the Greenbrier lime and the Berea sand to the top of the Corniferous lime, very good results were obtained. However, since the early days of the development, the entire general area has been prospected with the seismograph and it without doubt will be an invaluable aid in determining new prospective areas which will justify drilling. There is reason to doubt that any complicated folding will be encountered in the area west and northwest of the Warfield-Chestnut Ridge anticline. Apparently the Corniferous structure will be somewhat in accord with that of the surface beds, but possibly influenced and forced out of normal by the changing direction of thrust to which this general area was subjected.

Gasoline Content

An entirely new problem for the Appalachian operator developed shortly after these Oriskany wells were turned into line. That was the appearance of considerable quantities of natural gasoline which had to be handled. In the early days of Campbell Creek, this was done by the use of syphons, and the amounts handled were not large. When the Copenhaver area of Coopers Creek was developed with its much higher rock pressure and greater yield, it was necessary to install syphons, pipe line drips and tankage. When the Grapevine area was developed, the situation became more acute as it was out of the question to move the gasoline by tank truck over the winter roads. A pipe line company was organized by Columbian Carbon Company to which all completions were connected and the gasoline run as it was produced, with temporary storage erected at each well. Yield of gasoline has run as high as 700 gallons per million cubic feet of gas produced.

Later, West Virginia Gas Corporation installed the first separator unit, and to eliminate the problem of freeze-up, the first bottom-hole choke was installed in a well of William O. Ziebold. This latter operation has proven very useful in that in most instances, operators are able to deliver only a small part of their open flow due to contract limitations.

In general the Oriskany sand discovery in West Virginia has been of major consequence. Many operators have hesitated to come into the play because of the short life of the few fields developed earlier, especially in Ohio, but it is thought that conditions are more favorable here. There is first the greater extent of the two fields and especially that of the Elk-Poca area. Next is the thickness of the sand body which in the Elk-Poca field averages thirty to thirty-five feet, with somewhat less at Campbell Creek. There appears to be a total absence of oil or salt water within the proven areas, and in the Elk-Poca area no indication of it. Finally, there is no apparent displacement of the formation by faulting in either of the fields, but on the other hand a gentle and uniform folding with no abrupt dips. Apparently at the junction of Coopers Creek with Elk River, there is a small area of major fracturing, without displacement, which had adversely affected accumulation.

This contrasts with, for instance, the Cambridge field of Ohio, which had an average thickness of sand of from five to eight feet with salt water coming into the sand as pressures declined. In addition it was greatly overdrilled, a mistake which should not be repeated in West Virginia. In the northern Pennsylvania-southern New York fields, there is pronounced faulting, block faulting and more complicated structure with edge water. The Hebron field with its great per acre yield had an area of less than 4000 acres.

When and where new fields may be developed is not known at present. Acreage is held quite solidly north from Kanawha County to Ohio River and northeastward for an equal distance. Geological and geophysical investigations are under way over the entire area. Some four or five tests to the north and northeast during the past year have been failures, but others are drilling and many more are in prospect. Going northeastward from Charleston, the next commercial production from the Oriskany sand or its horizon and from one well only, is near Uniontown, Pennsylvania, a distance by air line of perhaps 145 miles. Without much doubt, the sand is present over the intervening distance, and from the few tests drilled is somewhat thicker than in southern West Virginia. The possible play from Kanawha County northeastward in the Oriskany sand suggests the thought that it may possibly be somewhat similar to the play southwestward from Pennsylvania in the Big Injun, Berea, Gordon, etc., sands, which began more than forty years ago.

HANDLING AND OPERATING ABUSES TAKE HEAVY TOLL IN

Boiler Service

Boilers much more sensitive to operating conditions than generally recognized. The treatment they receive inside and outside largely determines their service life.

By BRAD MILLS,
Associate Editor

Ninth Article of Series

THE boiler is one of the largest, strongest and most expensive equipment items used in oil field work, yet its size and ruggedness do not render it immune to handling and operating abuses. The strength and safety factors built into modern boilers prompt many operators to expect the impossible in both performance and resistance to abuse. The average service life of hundreds of boilers has been little more than half that which would have been recorded under proper treatment.

A boiler in use constantly is acted upon by both heat and pressure, two of the most damaging forces encountered by metal. It is here that energy for operating the prime mover and auxiliary equipment is stored, and the fluctuating steam demands affect a boiler in many ways not understood by the average layman. The boiler plant is the very heart of a steam drilling outfit, yet its installation and operation usually are left to men who understand only the simple mechanics involved.

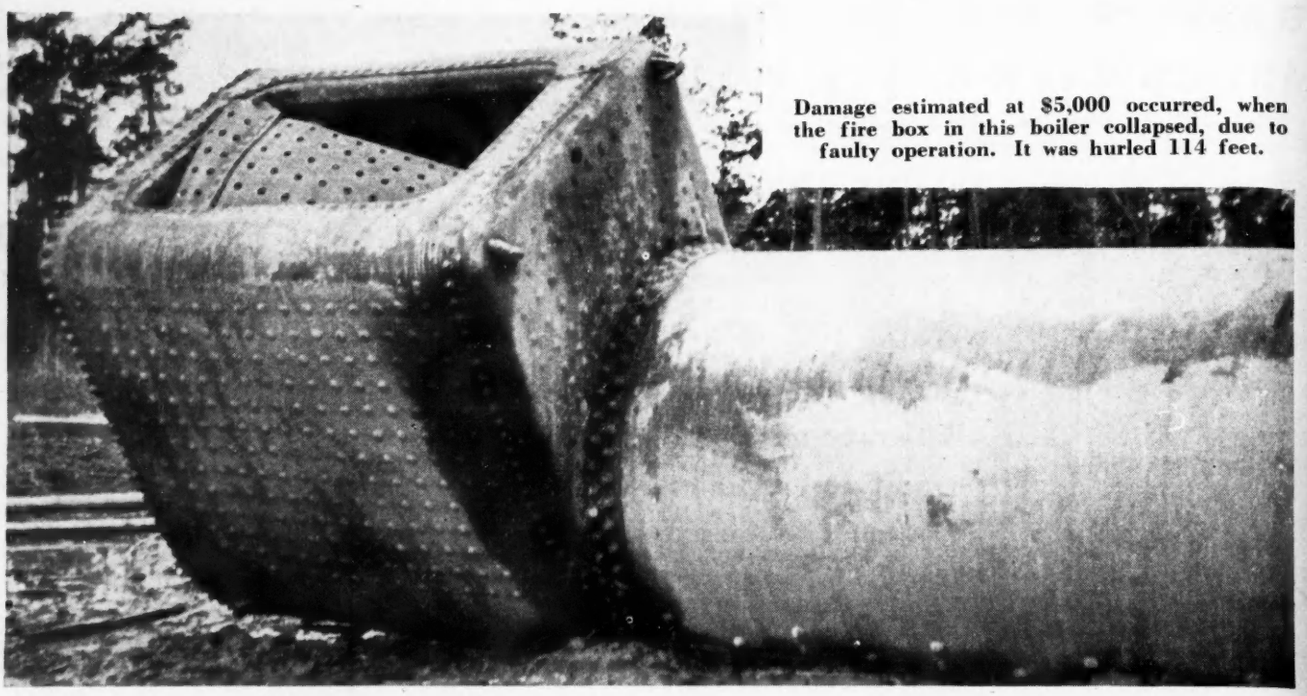
Boiler plants should include enough units to assure an adequate supply of steam under normal and unusual operating conditions. Where maximum power requirements are difficult to determine in advance, it is wise to use one more boiler than actually appears needed. Overtaxing a boiler is one of the worst forms of abuse, and the false economy usually leads to a loss of drilling time from lack of steam.

Many Common Abuses

From the single-boiler installation to the large battery combination, the same basic operating principles apply. Abuses extend from the warehouse to the final failure of a boiler. Rough handling, improper location with reference to the work, spasmodic firing, improper firing up, leaks, oil in boiler water, overheating, accumulation of scale, low water, and poor recording equipment are some of the most common forms of abuse. Any boiler obviously has its limitations, and an effort to double its usefulness by overheating or other efforts only results in a reduced service life. It is as easy to neglect a boiler as to neglect other equipment with many more working parts.

The average service life of a boiler has been difficult to determine. The United States Bureau of Internal Revenue estimates the average life of oil field boilers, operating under varying conditions, at from two to six years. The useful period depends on the type of work performed and the care shown by the operator. Such factors as the type of boiler feed water used, type of fuel burned, weather conditions, removal from one location to another, and a dozen other conditions affect the service life of a boiler. In extreme cases and under light service, one boiler may last three times as long as one in service under severe conditions. Care and maintenance are as important under one condition as under another.

In operating a number of boiler batteries, two extremes might be followed, or an intermediate course pursued. One company might take every precaution to furnish soft water, protect all boilers from the weather, school its operators, and hold the boilers to their rated capacity. Another company might use the least expensive water available, expose boilers to all types of weather, hire inexperienced operators, overload the boilers, and generally attempt to get maximum service from the boilers with the minimum outlay



Damage estimated at $5,000 occurred, when the fire box in this boiler collapsed, due to faulty operation. It was hurled 114 feet.

of expense. The third company might take the usual precautions against abuse, while avoiding any unusual expenditures that might give the ultimate in service. Most of the oil companies are in the third classification, since they go about halfway in their efforts to extend boiler service life.

In some districts, the need for completion of a task is weighed against the advantages shown by "humoring" a boiler. A few companies operate boilers in isolated districts with whatever advantages they can muster on short notice, the rapid completion of a task being the chief objective. Under such operating conditions it is not unusual to use brackish water, unsatisfactory fuel, and to call upon boilers to do much more than their rated work. Where a heavy flow of oil is expected and a lease is being offset, boilers often are asked to perform their task under adverse conditions. Under such conditions the operating company feels that the rapid completion of the well is more important than proper care of boilers and other equipment. In one new producing district the service life of boilers was less than half that recorded in an older and more desirable producing area.

Care Program Developed

Standard Oil Company of California has done much to raise the operating standards of oil field boilers. This company through actual operating experience has developed a care and maintenance program that gives a long service life, plus a safety standard that could not accompany a haphazard operating schedule. Instructions for care and operation of boilers are posted conspicuously in boiler rooms and at boiler batteries. Every phase of operation and maintenance is considered in the schedule, and the operator can easily follow the routine prescribed.

A boiler should be capable of performing the maximum work required of it, plus a good reserve. The absence of a fair power reserve invites abuses and usually affects the safety measures ordinarily demanded by the conservative operator. Drilling and field operations are not uniform from hour to hour, and it is difficult to assemble actual test data. The net result is that few oil companies know the power requirements for drilling or field operations.

Transportation Hints

A boiler should be handled as if it were a more fragile piece of equipment. The rugged outside appearance of the heaviest boiler is misleading. It has been the practice of a few "oldtimers" to drop boilers on the ground, where there was no apparent danger of striking rocks or other hard objects. This carelessness has resulted in internal damage to boilers that showed no outside marks. Only a slight strain is required to affect the position of the tubes.

In moving boilers or even shifting them slightly at a location, it is easy to throw a strain or twist that damages the seams or plates. A slight distortion of the plates or rupture of a seam may lead to serious trouble. The careless use of jacks or chains should be avoided. Jacks or levers placed under the mud rim or under the front of the barrel are permissible, but their use for a heavy lift under the back end of the barrel may create a dangerous leverage that affects the position of the tubes. The dome is most easily encircled with lines or chains, and because of this fact it is the favorite point of attack by the careless operator who wants to move a boiler on short notice. The dome should be used only as a stabilizing point and should not be acted upon by a strong or sudden force. Chains and lines passed around the barrel or the fire box are satisfactory lifting mediums, provided the entire boiler is free to move and undue leverage on any part is required. Attempts to pull the boiler horizontally so that it may later be raised vertically usually throws strains on the tubes and seams. This is especially true where the chain or cable is attached to the back end of the barrel. The fire box end obviously is more rugged than the stack end, but lack of support on either end when the other is not properly supported may place a strain on the mid-section. Lines or hooks connected to boiler attachments invite trouble, and lines run carelessly

RESTLESS ROADS

Story of another Goodrich development in rubber

ALL pavement is in constant motion, expanding with heat, contracting with cold. One mile of concrete, for example, is two to three feet longer in summer than in winter. Where does that three feet go? Without some provision, the pavement would buckle and destroy itself, so concrete roads are laid in sections of 60 or 90 feet, with space between to allow for expansion, and the space filled with asphalt.

But, when the pavement expands, some of this asphalt is forced out, and you have annoying bumps. So highway departments send out crews to trim off the overflowed material. In the fall, as the pavement contracts with cold and the spaces widen, they have to be filled again, or else dirt and ice would get in between the road sections and eventually cause them to buckle. Materials which do not flow have been tried, but these would not fill the joints when the pavement contracted.

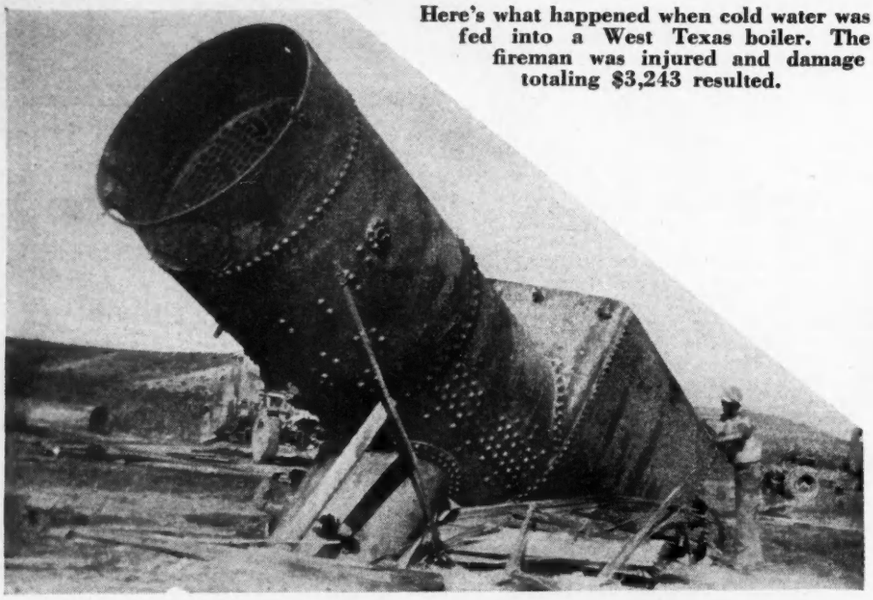
Goodrich believed there must be some better way. Goodrich discoveries in compounding had resulted in a rubber which withstands constant compression without losing its life, will flex indefinitely, will resist heat and cold, sunlight, air and water. This new rubber had been used to improve the quality of transmission and conveyor belts, hose and packing of many kinds—why couldn't it be applied to roads?

A rubber strip was finally developed and has now passed all tests by 2 years in use. It is simply pressed into the top of the space between pavement sections. When the pavement expands, the rubber strip expands downward because of its design, and you have no annoying bump in the road. When the pavement contracts, the rubber returns to its original shape—a snug fit.

Whereas the old method cost $250 a mile a year to maintain, the Goodrich expansion joint costs nothing to maintain and the original cost is about the same. Motorists will be saved from those annoying bumps, roads will last longer, and governments will save millions a year now spent in needless maintenance. The B. F. Goodrich Company, Mechanical Rubber Goods Div., Akron, Ohio.

Goodrich

ALL *products problems* IN RUBBER



Here's what happened when cold water was fed into a West Texas boiler. The fireman was injured and damage totaling $3,243 resulted.

through handholes or manholes are safety hazards.

Where a boiler is to be transported a considerable distance by highway, loading presents a problem. The large oil field boilers of today weigh from 30,000 to 42,000 pounds and few trucks can carry such a burden. One company finds it a good plan to bodily load the boiler on the truck or low-swung trailer, but other operators use timbers and trailers. During the early days of truck delivery boilers were swung or dangled in a manner that invited toppling over under adverse road conditions. In moving a boiler its supporting points should be about the same as at a battery. Short moves from one location to another do not require an elaborate transporting medium, but because of this advantage over the longer move many operators fail to exercise proper care during development of a field that requires frequent boiler changes. Many boilers are damaged in the field by improvised transportation equipment that does not meet requirements.

The location of a boiler plant with reference to the work performed often affects the service given by a battery. Care and maintenance costs also may be increased by an unfavorable location of the power plant. Where surface contrasts permit a choice of locations, boilers should be located lower than the principal machinery operated by the steam. A high boiler location encourages the pulling over of water and increases foaming during heavy use of steam equipment. The boiler domes should be as low or lower than the steam consuming level, but in flat areas this position is not practical. The boilers should not be located several hundred feet from the machinery. A distance of 200 feet is considered excessive in some fields, and many operators attempt to place the boilers within 100 feet of the mud pumps and drilling engine.

Firing Procedures

Care should be exercised in firing up a cold boiler. After filling the boiler with water the operator should look for leaks of any type. All leaks should be stopped before the fire is started. A slow fire should be started in a cold boiler and the full fire should not be reached under two hours in the oil field type. A warm boiler that is used a short time daily may be fully fired in an hour.

No two boilers fire exactly alike, and because of this peculiarity one or two boilers in a large battery may deliver more or less than the correct proportion of steam. In large batteries having several boilers of the same rating, the firing should be controlled to give an even evaporation of water. To determine this it may be necessary to shut off the feed water in one boiler at a time and record the period required to evaporate a given amount of water. The control of water evaporation is largely a function of firing, but it does not follow that the consumption of a uniform amount of fuel by several boilers of the same size will give a uniform flow of steam from each boiler. Some boilers fire much easier or harder than others, and it is not unusual to build a battery with boilers of several degrees of service. Two boilers with the same outside appearance may be in an entirely different condition on the inside.

A new battery of boilers should be fired up at a very slow rate, from 14 to 20 hours being required to reach the full steam pressure. In breaking in new boilers, it is a good plan to burn a very low fire in each boiler for several hours before starting the actual generation of steam. This permits the adjustment of all boiler parts to the changes brought about by the first application of heat.

Low water has reduced the service life of an unknown number of boilers. The operator in an effort to "cover up" the effects of low water may damage a boiler that otherwise would be undamaged by a short low water period. When the water goes out of sight, the fire should be shut off, the feed water line valve closed, and the boiler cooled. An inspection should be made to determine whether the boiler was damaged by operation with low water. It is the general practice with drilling boilers to permit the boiler to cool for 15 minutes before opening the water valve, following the discovery of low water. If no leaks appear after bringing the water up to the proper level, the boiler is fired and again cut in.

Good operating practice demands that a boiler in a battery should not be cut in with other boilers carrying steam until the pressure in the boiler exactly equals that in the other boilers. Even when the pressure is indicated as adequate, the steam valve should be cracked slowly and two or three minutes used in completing the operation. The difference in recording equipment readings may be considerable, but listening when the valve is cracked usually will reveal an unusual noise if the pressure of the incoming boiler is high or low. Cutting in where there is a noticeable pressure differential creates a severe internal boiler shock.

Attempts to repair boilers while they are under pressure are very hazardous tasks, and it is dangerous to tighten a bolt or do a simple caulking job under such a condition. Although danger to the operator is stressed, the abuse of the boiler probably is most conspicuous when makeshift repairs are

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attempted under pressure. Steel of any kind is less stable when heated and under pressure than when cold, and the nature of boiler construction does not permit heavy hammering or structural adjustments under pressure.

Small leaks soon lead to more serious trouble and it never is possible to determine the significance of a leak of any kind. A leak causes both corrosion and erosion, and eventually the boiler becomes unsafe for use under normal pressure. Leaks in the longitudinal joints never should be tolerated, and blisters or bags on the boiler plates should be reported to the inspector or foreman.

Oil in boiler water lowers the efficiency of the boiler, causes overheating, and generally changes the firing nature of the installation. Oil in a boiler is a serious form of abuse, and oily deposits should be removed by mechanical means or with a cleaner approved by the foreman or inspector. The adherence of oil to the inside of a boiler acts as a form of insulation that prevents the water from absorbing the heat and cooling the heating surface.

Operation of boilers with questionable gauges and safety valves is both unsafe and abusive. The gauges and valves should be tested often and at regular intervals. The pressure should be run up about twice each month to determine the accuracy of the safety valve, and the operator should test the valve each tour with the lever. Many single-boiler installations have been operated for months with gauges and safety valves so defective that the indicated pressures were only 75 percent of the true pressures. It is much easier to spot inaccurate gauges and safety valves on one of a large boiler battery than on a single boiler installation.

Boilers Need Cleaning

Fusible plugs not only should be kept clean, but they should be replaced occasionally. Refilling plugs in the field is a dangerous practice, and operators should be instructed to send them to the shop for refilling. The use of ordinary babbitt is a bad practice, and all fusible plugs should be filled with pure tin. Fusible or "soft" plugs should be replaced after a service of from 1500 to 2500 hours, but under severe conditions a more frequent replacement is advisable.

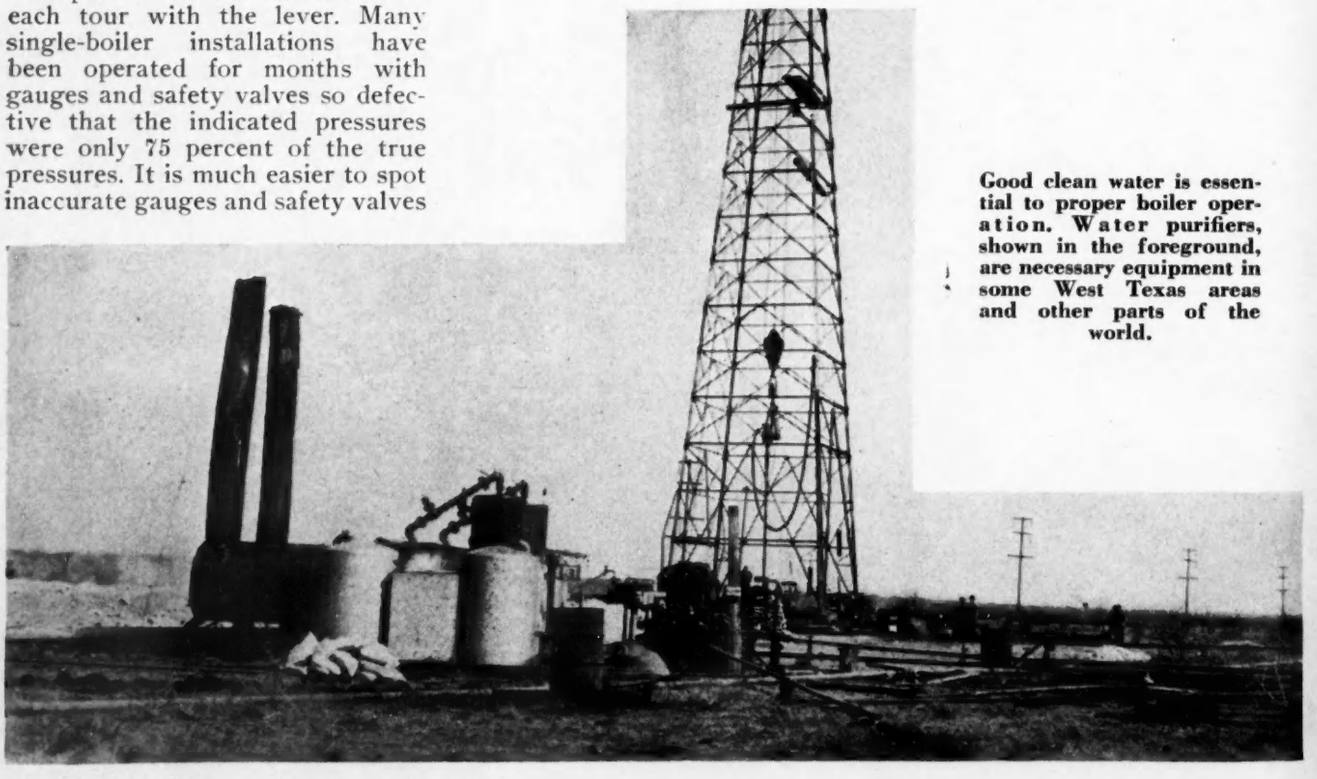
The cleaning of boiler tubes is a task dreaded by most operators. When burning oil, the tubes, tube sheet and smokebox require frequent cleaning. It is almost impossible to keep up steam when boiler cleaning is neglected. Attempts to overfire the boiler to offset the effects of dirty tubes is an abuse that soon defeats its own purpose. The heating surface becomes so coated with soot that heavier firing only wastes fuel and helps to deposit additional soot.

The removal of scale from the inside of a boiler increases its operating efficiency and reduces fuel requirements. It is the practice of several companies to remove scale when it becomes one-sixteenth of an inch thick. A mechanical cleaner or vibrator is used under the lowest pressure that will do the work. Many boilers leak after removal of scale, but the damage usually can be traced to carelessness in methods. All scale tends to insulate the inside of the boiler, and a coating greater than one-sixteenth of an inch seriously affects efficiency.

Boiler feed waters from natural sources contain impurities in varying degrees, the carbonates, chlorides, nitrates, oxides, silicates and sulphates being the most common offenders in this respect. They are deposited on the surface with which water and steam come into contact, and the resultant incrustation is commonly known as boiler scale.

Scale acts as an insulator and its conductivity is less than 1/40 that of iron. The heat that normally would convert water into steam simply bakes the metal and weakens all parts of the boiler exposed to flame. The correct treatment of boiler water reduces the formation of scale, and in many instances it is possible to prevent formation of scale over a long period. A study of individual conditions should be made by each operator, and with proper treatment of water it may be possible to eliminate excess formation of boiler scale.

Tests have shown that a scale accumulation of 1/32-inch requires a surplus fuel consumption of 10 percent, while an extreme scale



Good clean water is essential to proper boiler operation. Water purifiers, shown in the foreground, are necessary equipment in some West Texas areas and other parts of the world.

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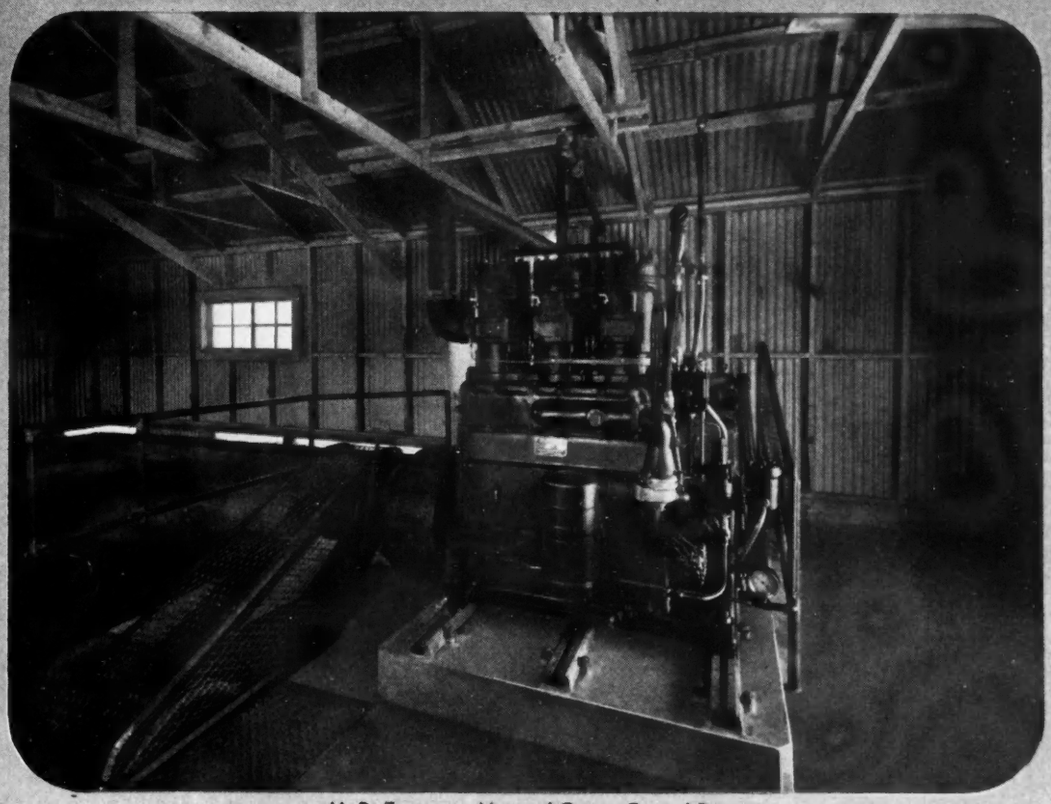

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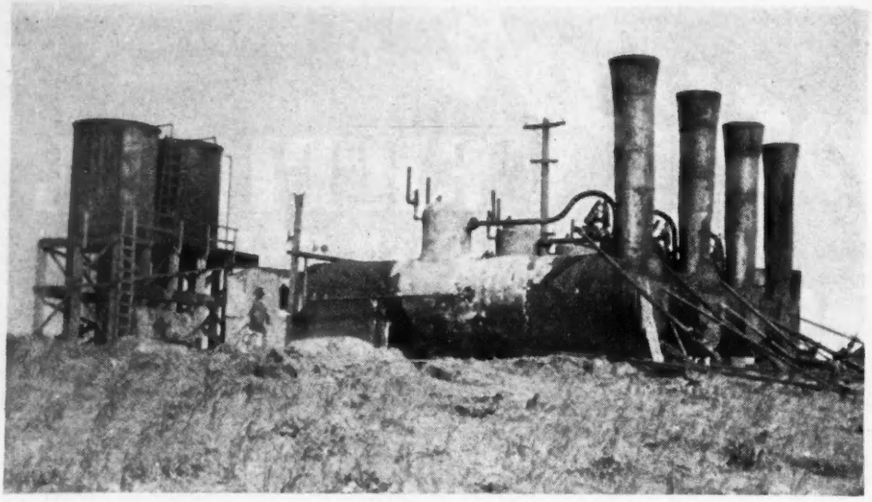


Short-stack boilers with forced draft, as shown above, are gaining popularity in California. The installation shown is one of many in the El Segundo field.

accumulation of ¼-inch requires a surplus fuel consumption of about 50 percent. The safest way to reduce or eliminate the formation of scale is to treat the boiler feed water in some manner.

When overheated, boiler plate has little strength and is easily deformed. The pressure in the boiler promptly pushes the plate outward, and if the heating is sufficient the plates tear away from the staying. This may result in a serious failure, and even a minor explosion may necessitate replacing the firebox plate. Inherent structural weakness of construction is not often the cause of a major failure, although it is important to use boilers suitable for their work. Any type of boiler explosion is fraught with danger to property and life.

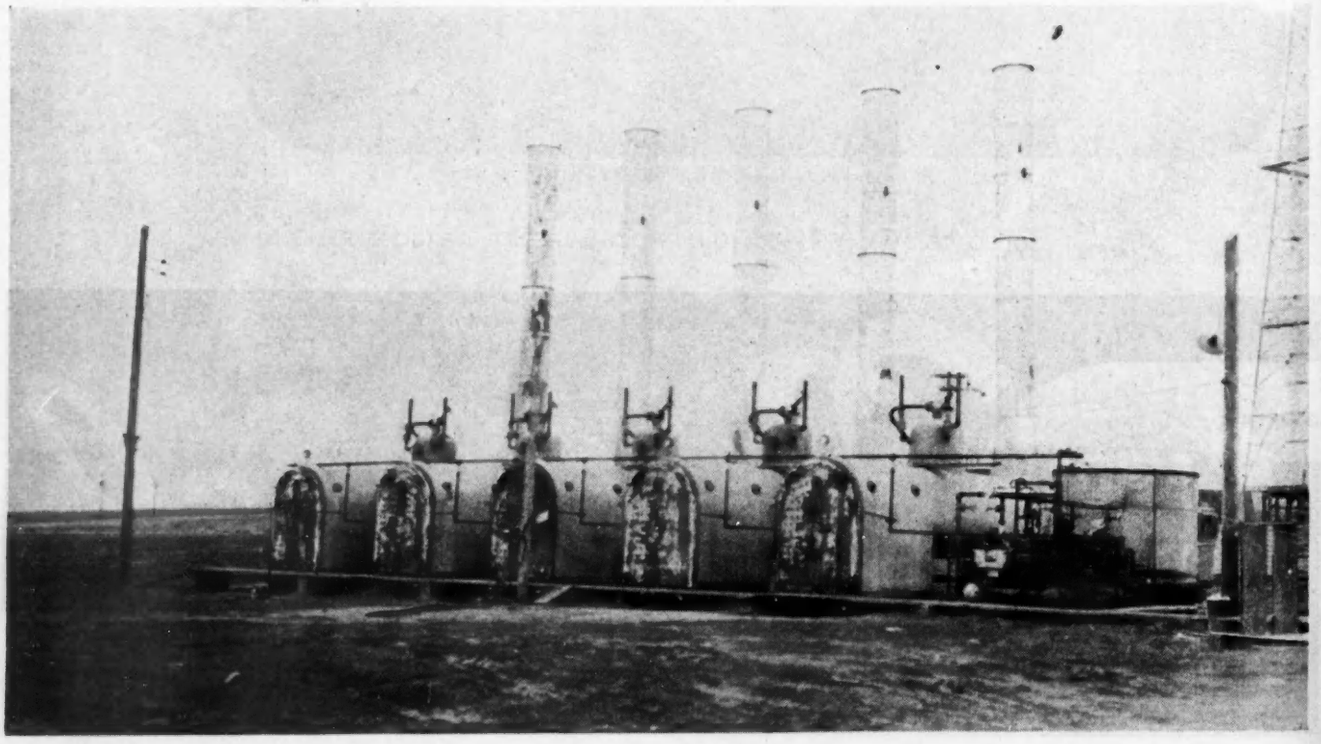
The oil field boiler of today is made from low carbon steel of two grades—fire box and flange. The fire box steel is used where exposed to the products of combustion, while such parts as the barrel, wrapper sheet and dome may be of flange quality. This low carbon steel of boiler construction is an iron alloy developed during the latter part of the last century.

The first steel boilers manufactured in America were finished in 1874. They were built of ⅜-inch steel and designed for 100 pounds safety valve pressure. Pressures have increased gradually during the past 50 years, and now it is not uncommon to encounter boiler shells five inches thick, with operating pressures above 1200 pounds. One boiler is being operated at a pressure of 2500 pounds, and another at 3200 pounds as an experimental project. Oil field boilers are operated at pressures ranging from 200 to 350 pounds, and new boilers are capable of carrying a high sustained overload. The fact that they are conservatively rated does not give license to abuse them.

The maximum safe working pressure established for the boiler is stamped on the boiler and should not be exceeded. A boiler is weakened by use and abuse over a period of time, and a reduction

★

Use of insulated boilers also is increasing in use. Below is a fully insulated steam plant being used on a California wildcat test.



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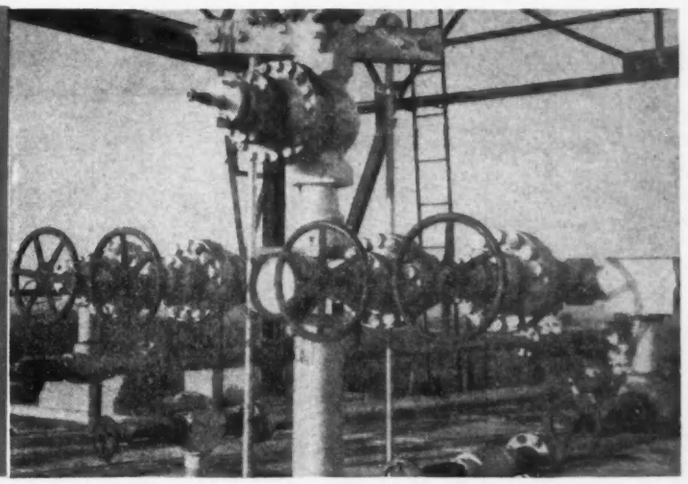

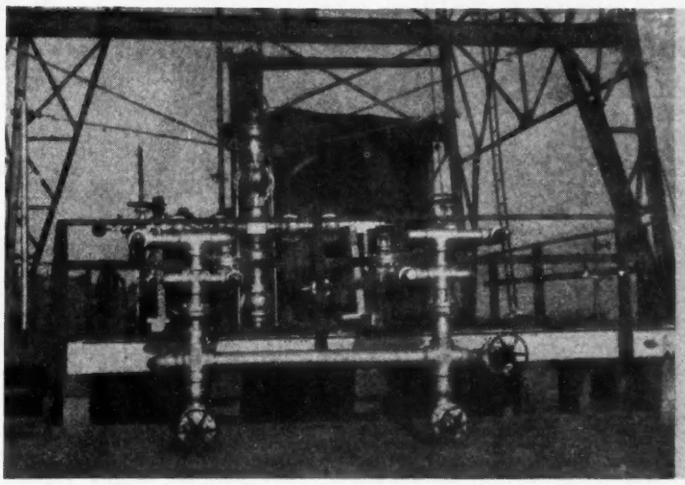

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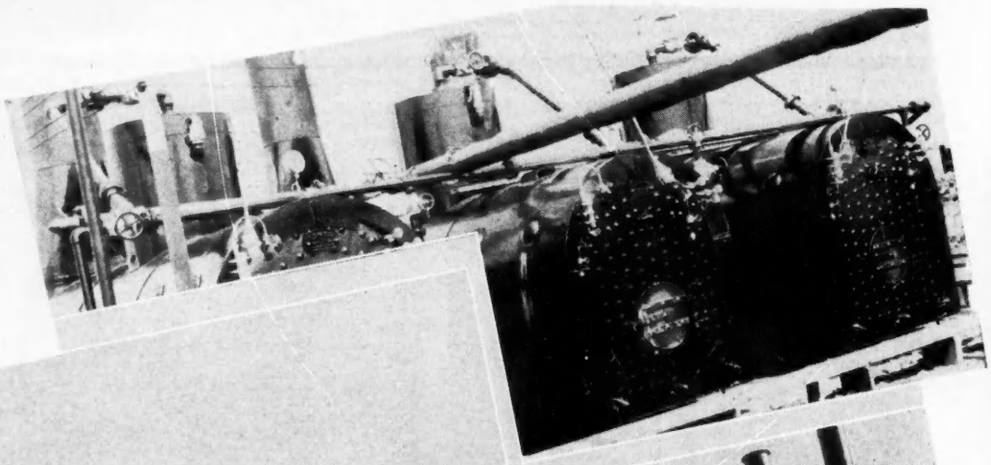
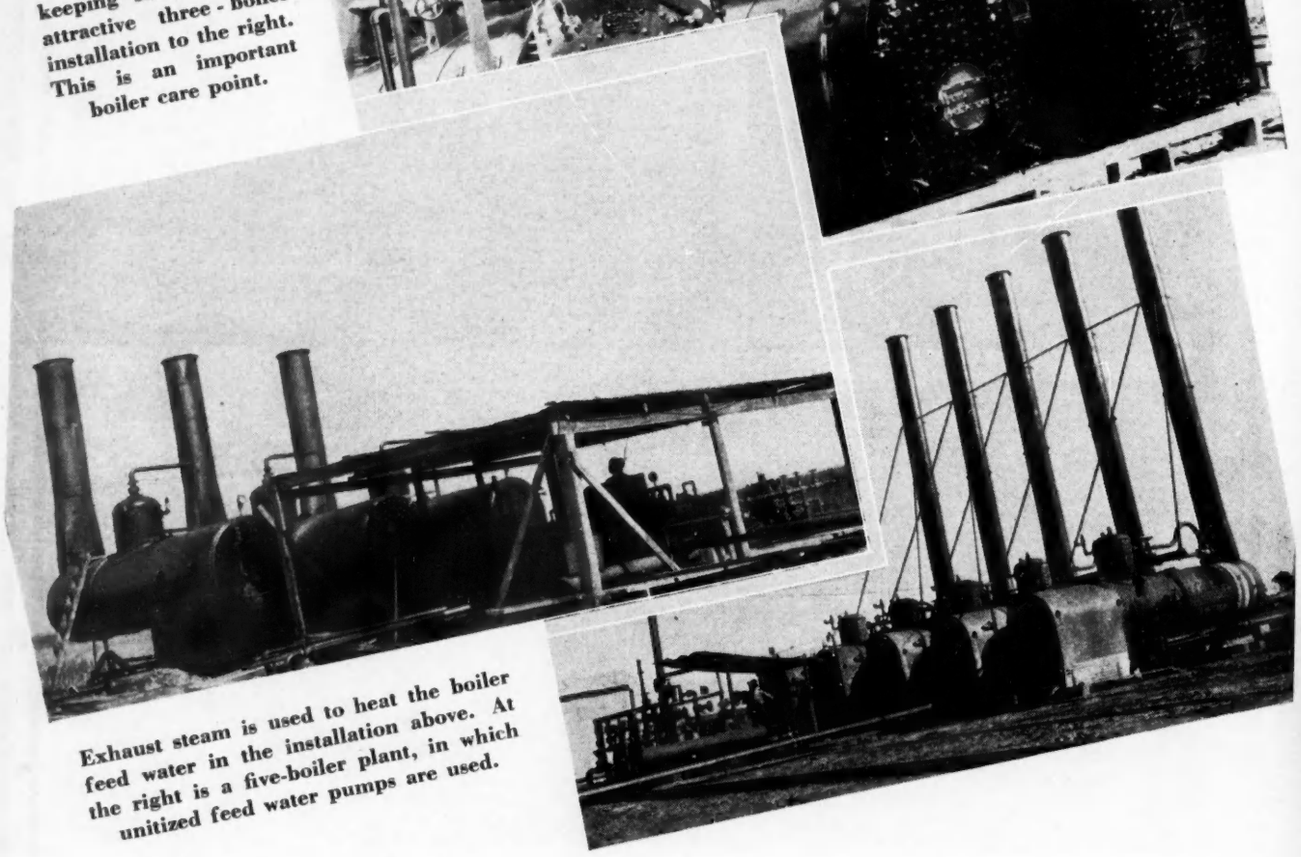


Note the good housekeeping shown on the attractive three-boiler installation to the right. This is an important boiler care point.



Exhaust steam is used to heat the boiler feed water in the installation above. At the right is a five-boiler plant, in which unitized feed water pumps are used.

in pressure becomes necessary to maintain the normal margin of safety. Where the full new boiler pressure is required to operate the equipment, it may be necessary to retire old boilers from service.

In some of the deep oil fields, the annual replacement of the drilling boiler is looked upon as a matter of course. Such a depreciation and replacement charge is excessive, and should be attributed to failure to observe sane operating rules.

The boiler plant should be provided with two methods of water feed supply, either of which should be ample for the needs of the plant at peak loads. The high-pressure oil field boiler has heating surfaces not accessible for thorough cleaning by mechanical means, making it important that the feed water be free from scale-forming ingredients before actual use.

The use of boiler insulation is gaining favor in all drilling districts. The covering greatly increases the efficiency of the boiler, and at the same time protects it from the weather. An unprotected boiler that can do its work on a hot day often has difficulty delivering the required amount of steam during cold or rainy weather. The use of insulation of an effective type gives greater boiler efficiency and practically eliminates the pressure drop during cold weather.

When a boiler is to be laid up for an indefinite period, it should be washed and cleaned inside and out. The safety valve, gauge, siphon and gauge cocks should be removed and sent to the reclamation division or repair department for a careful check and adjustment. All water lines should be disconnected and the boiler thoroughly drained. The boiler should be left open to reduce corrosion. The boiler should be allowed to cool thoroughly before it is emptied. Blowing out water under steam pressure is abusive practice. Boilers should be washed once each month or oftener. Washing removes much of the temporary scale that has not had time to harden.

Reprints of the foregoing article are available at nominal cost by writing The Gulf Publishing Company, Houston, Texas

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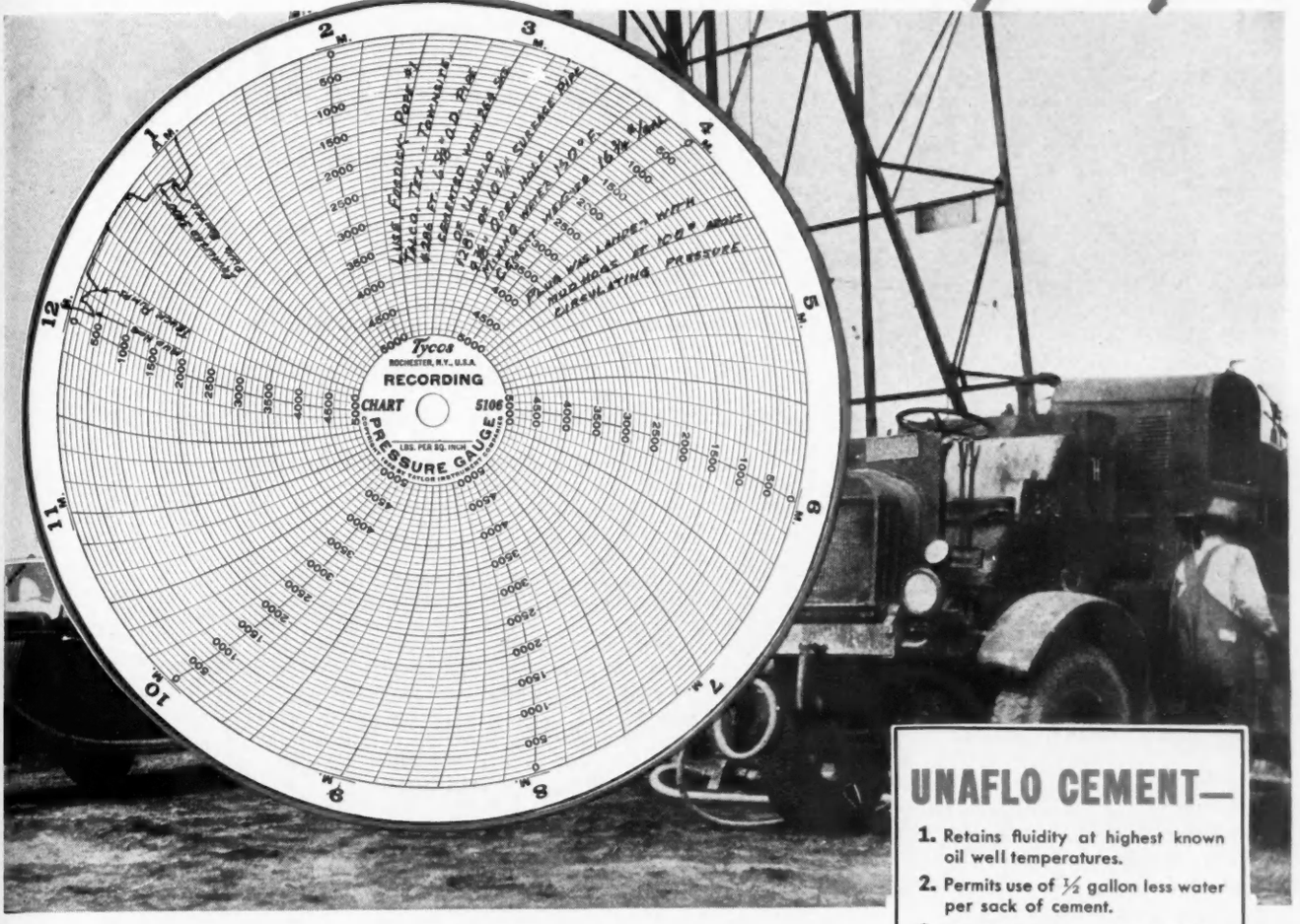

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Malodorants for Fuel Gas

By MICHAEL J. LEAHY

"Be it enacted" is a simple phrase for the legislature, but when all gas in a big area like Texas must be given an offensive odor it starts many problems for the engineer, both in chemistry and mechanics . . .

LEGAL authorities have interpreted the recently enacted Texas law requiring the use of malodorants in all gas to be used for domestic fuel purposes to mean that in every case where there is any possibility of any part of the natural gas or liquefied petroleum gases being taken from a pipe line or container and used as domestic fuel, all the gas in such pipe line or container must have a malodorant mixed therewith directly at the source of supply. This interpretation presents a number of problems to the producers, transporters and marketers of natural gas, petroleum gases, and even the oil itself. These problems must be solved immediately because the malodorant law contains an emergency clause which places the law in effect within 90 days from the date of its passage.

The first problem raised is that of devising means of mixing the malodorant in the gas as it issues from individual wells. As the law reads, even gas taken from a single well for use in isolated lease houses located on the same lease as the well must be malodorized before it enters the gas line. This means that both gas and oil producers will be required to install thousands of units for mixing malodorants in gas to take care of this situation alone. The most difficult part of this problem is that of devising an apparatus which will supply a constant volume ratio of malodorant to the gas regardless of the rate of flow of such gas in the line. It has been suggested that an orifice plate could be placed in the line and that the malodorant be sucked into the line on the low-pressure side of such orifice plate. This might prove satisfactory in those instances where the rate of gas flow is fairly uniform. In fact a modification of this method is being used by Lone Star Gas Company to inject a malodorant into the fuel gas mains entering Fort Worth; as shown by Figure 1. This device is almost entirely automatic in operation; but necessarily a considerable volume of fuel gas is flowing in these mains at all times even on hot summer nights. However at isolated dwellings gas is not used continuously and during periods when no gas is flowing in the line, the vapor pressure of the malodorant is high enough to cause such vapor to force its way into the gas line. Hence when a gas burner in the house is lighted after a period of non-use a concentrated mixture of malodorant instead of gas will be burned therein. This not only will cause a waste of the expensive malodorant, but will produce noxious and choking fumes that will permeate the dwelling to the discomfort of the occupants. Such fumes will also tarnish silverware, nickel-plated articles, and even mirrors within the house.

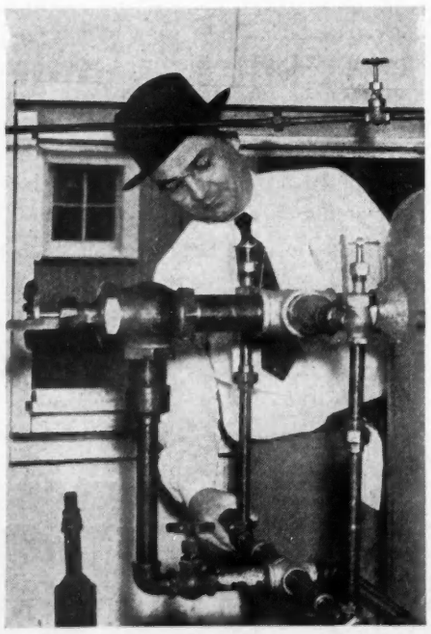

FIGURE 1
Device for injecting malodorant into gas line.

Injection Into Line

The most promising solution to this problem seems to be that of placing a small anemometer, or a tiny velocity turbine, in the gas line on the low-pressure side of the pressure regulator. This anemometer or turbine could be connected to a spring-operated needle valve which would control the flow of malodorant into the gas line. Thus the higher the rate of gas flow in the line, the greater would be the amount of malodorant fed into the line. At such times when no gas was flowing the spring-operated valve would close completely and thus prevent seepage of malodorant into the gas line.

The next problem clamoring for solution is that of determining the proper point at which to feed malodorant in gas trunk lines serving towns and cities. The malodorants most likely to be used are the mercaptans which are classified as organic sulfur compounds. It is true that most of these mercaptans

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have but very slight corrosive action on ordinary metals at atmospheric temperature and pressure. However, in high-pressure gas lines the partial pressure of the mercaptan malodorant in the gas will be high enough to cause sufficient corrosion of the interior of such lines as to neutralize the mercaptan odorless. According to the present interpretation of this law, malodorants will have to be placed in all gathering lines right at the well-head if any of the gas is to be burned for domestic fuel. Then if the malodorant is later neutralized in the trunk lines, further quantities thereof will have to be added to the gas in each branch line leading from the trunk line. This in itself will be a stupendous task and enormous quantities of malodorants will have to be purchased to meet these requirements.

Gas to Gasoline Plants

The law has further been interpreted to mean that every gathering line from an individual well to a gasoline plant will have to be equipped with a malodorizing device. Hence all the gas processed in each gasoline plant in Texas will of necessity contain sufficient mercaptans to cause all the natural gasoline obtained therefrom to be extremely "sour"; as it is well known that natural gasoline absorbs mercaptans very readily. In fact the oil industry has been fighting this mercaptan problem in gasoline ever since gasoline has been used as a motor fuel. Now, if more mercaptans are to be added to the gas, that means that the cost of doctor-treating the gasoline will be increased tremendously. Furthermore, if there is any possibility of any of the residue gas from any gasoline plant being used for domestic fuel purposes, all such residue gas will have to be malodorized again before it is transported from the plant. Another peculiar feature of this situation is that if a malodorant of the mercaptan type is added to the gas at the well-head of a sweet gas well, the total sulfur content of such gas will then be high enough to classify such gas as "sour" under the definition contained in the Texas Gas-Wastage Law. Hence such gas may then be used for purposes other than domestic fuel under the terms of said law. This will lead to a legal absurdity in that full compliance with one law will nullify the other. Apparently there is no chemical or engineeering solution to this problem. It is up to the courts to decide the points involved.

What to Use and Cost?

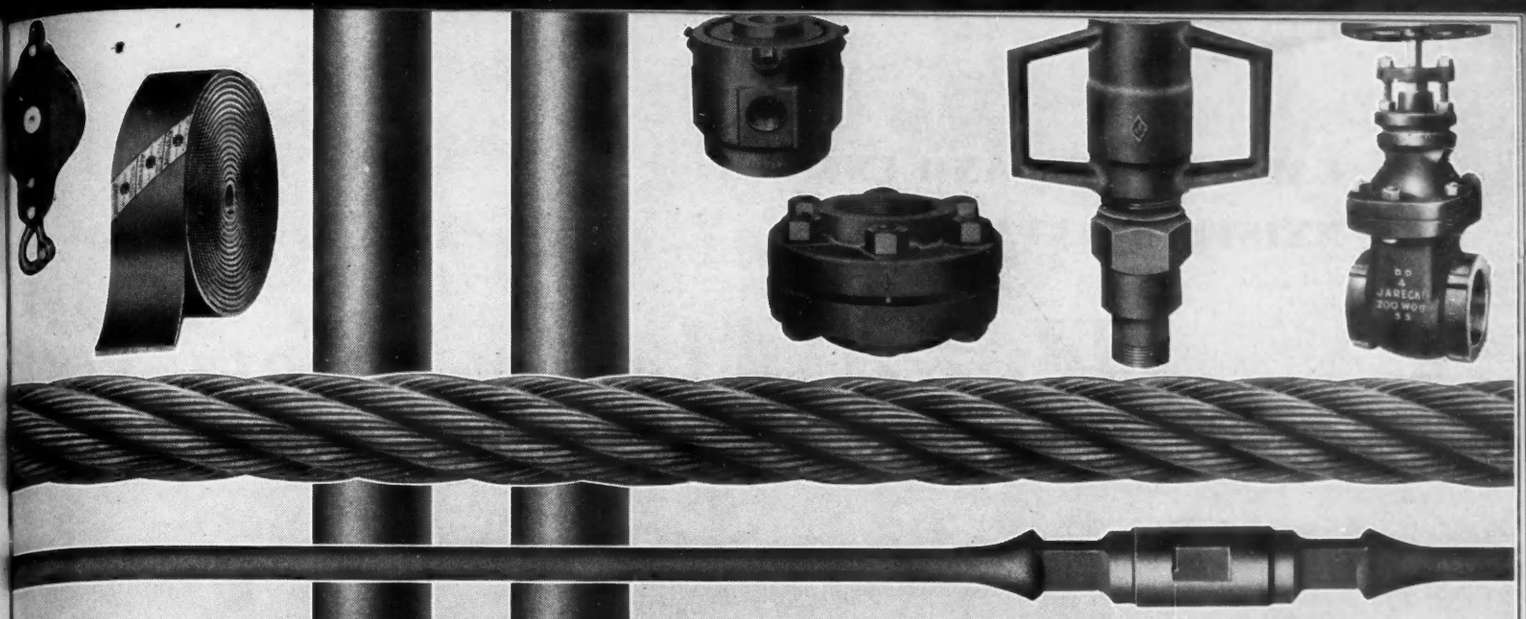
Another problem that the gas industry faces that is apt to become acute is that of obtaining sufficient supplies of suitable malodorants at reasonable prices. There are numerous chemicals which may be detected even in minute proportions by their odor. For instance, acrolein is a liquid chemical that has a very distinctive and penetrating odor; but this chemical may not be used as a malodorant because of its nauseating effects on human beings. Further, burning gas containing acrolein increases these nauseating effects and also produces a burning sensation in the eyes and other exposed membranes. Another suggestion has been to use tear gas as a malodorant. The objections to this are: Tear gas itself is not a liquid or a gas, but a solid substance. It may be dissolved in benzene and then used in this liquid state; but solution dilutes the tear gas and thus a much greater quantity of the solution must be used than would be required for the solid chloracetophenone itself to produce the same effect. Further, tear gas affects the eyes primarily to produce copious lachrymation, but has a rather pleasing odor. Hence it may not be classed as a malodorant.

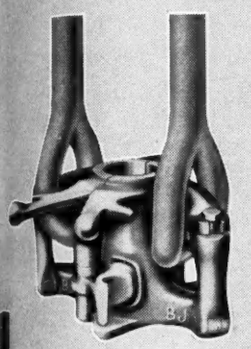
In order to comply with the legal definition of a malordorant and to conform to the physical restrictions imposed in actual use, the chemical used must be non-toxic even in a pure state, must be non-explosive, must be detectable in minute quantities solely by its odor, must be liquid at ordinary temperatures and pressures so that bulky shipping containers will not have to be used for transporting the pure material, must have a freezing point sufficiently low to prevent solidification of the malodorant in cold weather, and must have a vapor pressure sufficiently high to permit vaporization even at high pressures and low temperatures. Practically the only chemicals that conform to all the above requirements are the butyl and the amyl mercaptans. That is why these particular mercaptans have been used almost exclusively as malodorants in those gases that are poisonous but that have no distinctive odor.

Mercaptans have been made on a laboratory scale ever since their discovery in 1855. The most common method used is to pass a mixture of the vapors of the proper alcohol and hydrogen sulfide over a solid catalyst heated to 280°C. and then condense the resultant products. By this method about one half of the total alcohol used is converted into the specific mercaptan; while much of the corresponding organic disulfide is also produced. This liquid mixture is allowed to separate and the water formed is decanted. An organic salt of a heavy metal is then added to the liquid to precipitate the mercaptan. After filtration, the solid is acidified with an inorganic acid and this mass is then distilled with steam in order to release the mercaptan. The pure mercaptan is then separated from the water and is dried. Calculations show that the amount of hydrogen sulfide required to produce sufficient mercaptans to malodorize even one tenth of the volume of gas produced and used in Texas would be enormous and this hydrogen must be used in a pure state. Compressed hydrogen sulfide in cylinders is available for laboratory use; but as far as is known no pure H_2S is sold in the United States for commercial use. However the so-called high-sulfur natural gas in West Texas and in the Panhandle contains varying percentages of H_2S which may be extracted on a commercial scale and in a relatively pure state[1]. There is sufficient hydrogen sulfide available from these sources to supply all the demand for this gas for making mercaptans. However it is going to be a real chemical and engineering problem to adapt the described laboratory method of making mercaptans to commercial-plant scale. Of necessity, plant for the extraction of H_2S from natural gas and for the manufacture of mercaptans will have to be located in very isolated spots as hydrogen sulfide gas is very poisonous and the mercaptans produced will be very foul-smelling.

All in all, compliance with the Texas Malodorant-for-Gas Law is due to be the cause of much labor, expense, and violent headaches to the gas industry. The only possible method of dealing with the problems involved is by full cooperation of all parties concerned.

[1] "Cleaning High-Sulphur Gases," Michael J. Leahy, Refiner & Natural Gasoline Mfgr., Vol. 15, No. 7, Pg. 276-9, 1936.





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CALIBRATION AND USE OF EXISTING DATA IN

Head-Meter Testing

By E. E. AMBROSIUS,
Assistant Professor of Mechanical Engineering,
College of Engineering, The University of Oklahoma

UNTIL very recently the use of head meters was confined almost entirely to the metering of water, steam and fuel gases under conditions which could be represented by medium to very high Reynolds numbers. The value and desirability of extending the range of tests to include the conditions represented by very small Reynolds' numbers have long been recognized from the scientific standpoint. Recently, the proration imposed on oil fields, and the introduction of modern methods of refining, together with the ever increasing use of pipe lines for the transportation of crude oil, has resulted in a definite need for accurate information on the performance of meters, used with viscous or sticky fluids. This is particularly true for low values of Reynolds' numbers, since the present information in the literature is meager and in many cases unreliable.

Industry in general is cognizant of these facts and is adjusting itself accordingly, but a few remarks relative to the calibration and use of existing flow meter data is apropos at this time.

In planning or conducting any tests relative to orifices, or any other metering device for that matter, the conditions under which such a device is ordinarily used in practice should be considered. No special attempts at refinements of apparatus or methods of observation beyond what may reasonably be expected in good practice should be employed.

Before one can venture far into this discussion, some of the salient features in the determination of the experimental coefficients, as well as other necessary calculations, should be made. First of all, the coefficient, which appears in all the flow equations, and which is the basis for all calibration work, is nothing more than an "Ignorance factor." This can be explained by the fact that the theoretical calculated quantity of fluid flowing through an orifice does not agree with the actual measured quantity. It is therefore necessary to have a suitable coefficient in the equation which will make the calculated theoretical values agree with the actual.

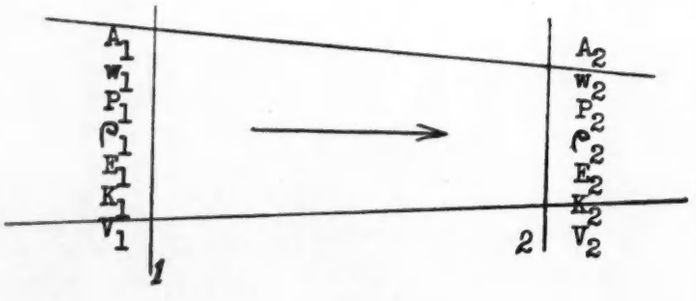
Discrepancy Between Values

The discrepancy between the two values can be described in the following manner:

As the fluid stream approaches the orifice it converges, and continues to converge after passing through the orifice until a point of greatest contraction takes place. This point is called the vena contracta. The fluid stream then expands until normal flow is again reestablished. This does not appear to be a complicated phenomena. However, the transformation of energy, first, from potential to kinetic and then from kinetic back to potential is very complicated. The latter is especially so, and it is doubtful as to whether the best hydrodynamic mind can fully explain the internal mechanism of this transformation. This, however, need not cause us great concern, since a great deal of the uncertainty can be placed in some mathematical constant which can in general be determined experimentally.

Several hundred years ago, Bernoulli arrived at the all important hydraulic law, which is in substance this: the total energy at any section of a pipe in which there is a fluid flowing, must be equal to the total energy at any other section downstream, plus the losses that have

FIGURE 1



A - Area
w - Velocity
P - Pressure
ρ - Density
E - Internal energy
K - Kinetic energy
V - Specific volume

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taken place between the two observation sections. Applying this law to the orifice type of meter without losses necessitates several assumptions. First, the flow is steady, that is, the same weight of the fluid passes the observation sections during equal intervals of time. Second, there shall be no gain or loss of energy by the fluid between the two sections, that is the flow must be adiabatic.

If oil is being considered as the flowing fluid, and it is considered as being incompressible,

$$\frac{w_2}{w_1} = \frac{A_1}{A_2}$$

In which w, and A, are the velocities and areas of the two sections of the pipe under consideration. The duct will be assumed to be horizontal such that no gravitational work be done either by, or on the fluid. The energy equality, with reference to a general case as shown in Figure 1, may then be given.

$$E_1 + K_1 + P_1V_1 = E_2 + K_2 + P_2V_2 \qquad I$$

This is a general equation and holds for any fluid. Nothing has been said about friction, but since it only affects E and K, but not their sum it is taken care of. If the gain in kinetic energy in this equation is equated to the loss in potential energy, we have,

$$K_2 - K_1 = (E_1 + P_1V_1) - (E_2 + P_2V_2) \qquad II$$

This is again a general equation and can be applied to all fluids. Since the flow is adiabatic, any change in internal energy will appear as heat. This change in internal energy can be represented by $F_{friction}$ or $E_2 - E_1$. Due to turbulence and the fact that the velocity distribution is not constant across the duct, the absolute value of the kinetic energy is greater than, $K = w^2/2g$. This fact permits us to write,

$$w_2^2/2g - w_1^2/2g = P_1V_1 - P_2V_2 - \text{losses} \qquad III$$

This being an algebraic statement of Bernoulli's theorem already referred to.

Counterbalancing Losses

In most orifice work the losses are not evaluated as such, but their omission is counterbalanced by the introduction of a "coefficient of discharge."

Under ideal conditions,

$$(w_2^2 - w_1^2)/2g = (P_1 - P_2)/p = h \qquad IV$$

This being a general equation and can be applied to the orifice after proper allowance is made for the velocity of approach and contraction coefficients. This equation gives an expression of the change in velocity or kinetic energy in terms of the loss of potential energy. However, we are not so much interested in this case as we are in arriving at the amount of fluid flowing past the orifice or nozzle for a given differential. The equation representing the latter case, as taken from the American Society of Mechanical Engineers Fluid Meters Report, is stated thus:

$$Q = C\frac{A_2}{\sqrt{1 - m^4}}\sqrt{2gh}$$

Where:

Q=Flow in cubic feet per second.
C=Coefficient of discharge for the meter corrected for the velocity of approach.
g=Acceleration of gravity in feet per second squared.
h=Head in feet of the fluid flowing.
m=Diameter ratio.
A_2=Cross-sectional area of differential producer in square feet.

In normal calibration work all the factors in the equation just stated, can be evaluated except the value of C, namely the coefficient of discharge. In careful calibration work extreme care should be exercised in measuring the differential pressure. This is especially true for small differences in pressure, since a small error in reading will cause a large percent error in the result.

Preliminary to taking observations with oil flowing in the pipe, all cocks should be opened and the pipe and gauge connections should be flushed thoroughly. It is important that there should be no air in the pipe in the vicinity of the orifice. If there are no pressure openings in the upper side of the pipe, pet cocks should be inserted. When opposite openings are inserted at each section, provision should be made for ascertaining whether or not the tubes are free from obstructions and full of oil.

Openings Must Be Large

It is also very important that pressure openings be amply large. This precaution is especially applicable to flow nozzles with throat connections. Openings of one eighth inch or less may become plugged easily. The viscous action of the oil may plug or have the effect of plugging the opening. This action will always cause a decided lag in the differential readings, and can be compared with a gauge that is throttled too much. Under such conditions it may be several minutes or in some cases the columns may never become fully adjusted to the change in pressure.

In order that the published coefficients of orifices as found in the literature may apply to orifices as used in practice, the up-stream edge should be square and sharp, without any burrs or rounding. Tests have proven that if the edge is rounded, the indicated measurement will be low. Orifice plates should never be cleaned by using emery cloth or similar abrasive material. In the event the edge has a fin extending into the opening or extending upstream, the fin should be removed by careful honing. Orifice plates should never be transported or stored without protection from either mechanical or corrosive injury.

If the orifice disc is bevelled, install with the sharp edge upstream. The gaskets should contain openings as large as the pipe and preferably be shellacked on the pipe flanges. It is not wise however to shellac to the disc, since practice has proven that white lead is preferable. In this connection care must be exercised in placing the orifice in the line in order to avoid any eccentricity, for the meter and the line should be concentric. This is particularly true for the orifice with large diameter ratios.

Avoid Pulsating Action

Frequently the flow is of a pulsating nature. When such is the case serious errors will result in the resulting indicated flow. This is true because the meter records the mean differential pressure, while the rate of flow depends on the square root of the differential pressure. The ill effects of pulsation can be avoided by a

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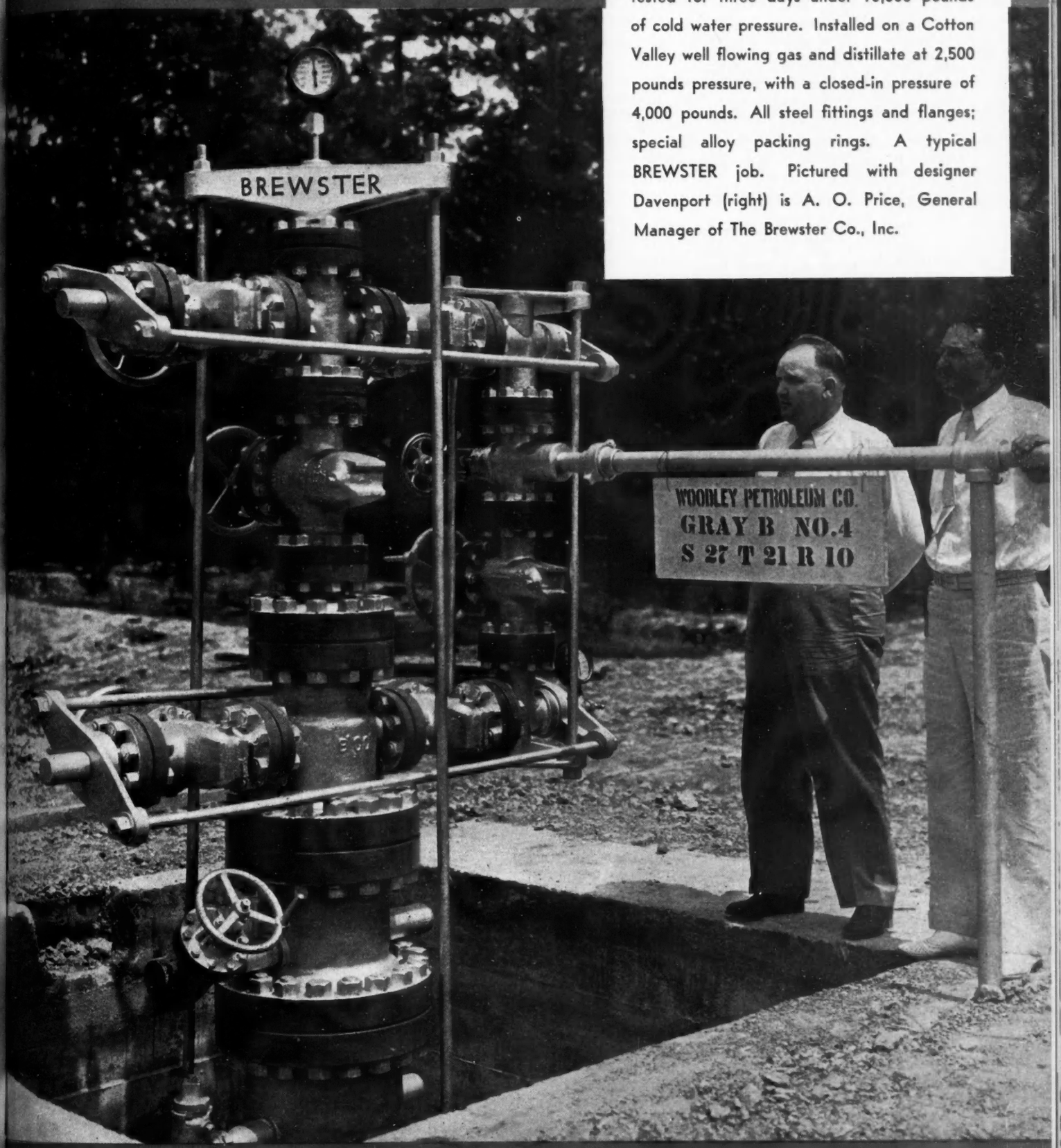


The BREWSTER COMPANY, Inc.

PHONE 3181 SHREVEPORT, LA.

Houston, Texas — Longview, Texas — Houma, La. — Lake Charles, La. — New Iberia, La. — Rodessa, La. — Corpus Christi, Texas.

Export Office: Acme Well Supply Company, 136 Liberty Street, New York City

suitable combination of air chambers and throttling in the line.

Frequently straightening vanes are used ahead of the metering device, and there is no doubt but what the coefficient is influenced by their presence. The obvious purpose of these vanes is to eliminate whirl and eddy currents. These vanes are usually built of standard pipe or thin walled tubing, welded together and held securely to the pipe. In the event that thick walled pipe is used it would be wise to cut back the ends to a thin sharp edge. If the orifice meter is installed just after two turns or elbows in planes perpendicular to each other, straightening vanes should be installed not less than two pipe diameters above the meter.

Find Orifice Disc Diameter

In performing any tests or installing any meters it is always wise to find the diameter of the orifice disc with a good micrometer. The diameter of the pipe should also be checked since frequently heavy pipe is used and the coefficient is based upon standard pipe. The exact pipe diameter is not so important with small orifices but a small difference in diameter makes an error of several percent in the coefficient if the diameter ratio is large.

In general, it must be assumed that the fluid to be measured is free from suspended matter. If the concentration and physical characteristics of any suspended matter present are known and if the suspension is a homogeneous one with no tendency to settle out, a suitable allowance may be made. To this end, the density of the fluid as well as the viscosity is corrected to allow for the suspended matter. With certain oils the precipitation of wax may cause no end of trouble in accurate metering work. First of all, an oil that has a sufficiently low temperature to precipitate some of the wax, erratic viscosity values within the corresponding temperature range will result. This is believed to be due to the wax crystals adhering to the orifice of the viscosimeter and changing its characteristics. Also, for any given temperature the oil may have an entirely different viscosity if it is cooled down to the said temperature than when heated from a low temperature to the temperature in question. In view of these facts it is always wise to make periodic checks on the oil in order to observe this important characteristic.

A feature which is frequently overlooked in metering work is one which is commonly referred to as central flow. A simple but effective method to test an installation to see that the flow through the line is central with the pipe and orifice, is to make pressure connections opposite to those which are connected to the meter. If a differential is produced when a U-gage is connected across the pipe to the opposite tap, it indicates that the pressure at the two taps is not the same and therefore the flow through the pipe is not central or there is some obstruction causing the difference. In any case the situation should be corrected.

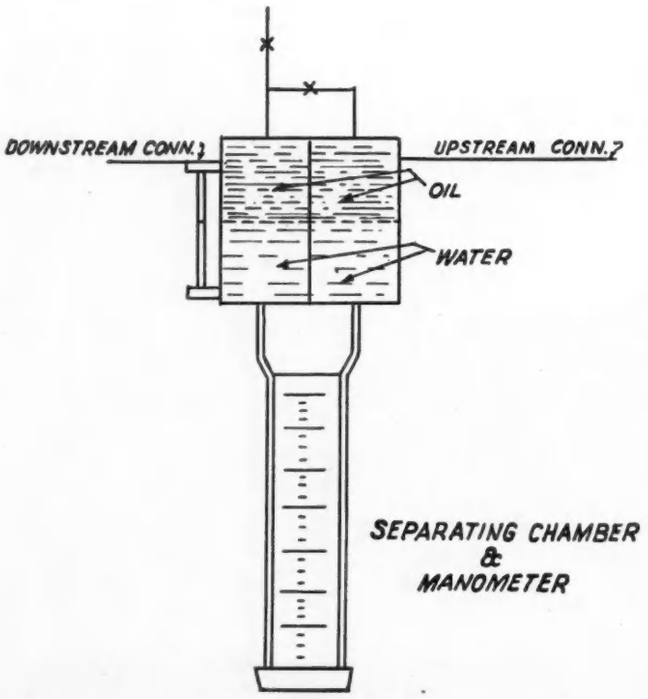


FIGURE 2

Same Precautions With Nozzles

When flow nozzles are used to measure the rate of flow the same general precautions should be used as in the case of orifices. In general, a flow nozzle or venturi tube should be used in measuring viscous fluids rather than thin plate orifices. Test results indicate that nozzle coefficients vary less from the average curve than do orifice coefficients, when oil is the fluid under consideration.

Theoretically it is quite immaterial at which points upstream and downstream the pressure taps are located, provided that each installation is individually calibrated. Any coefficient thus obtained is bound to give good results. If, however, a coefficient is obtained from the literature it is always advisable to observe under what conditions the coefficient was determined. This will always insure its correct usage, because then the installation can be made geometrically similar, the type of orifice plate can be made the same, as well as the diameter ratio and the location of the pressure taps.

Special Manometer Needed

In case where fluids of densities less than that of water are flowing it is well to have a drain on the upstream side of the orifice plate. This will permit draining any water that might collect there. In experimental work in general, the drop in pressure across the orifice is measured by means of water or mercury manometers hooked up differentially. Due to the fact that the oil used, will in general be dark in color, it will take a special type of manometer arrangement. The reason for this is that if the oil were to come in direct contact with the gauge fluid, it would be difficult to read the meniscus separating the two fluids. This would in turn indicate inaccurate pressure measurements.

The type manometer that would serve for taking the differential pressure readings is shown in Figure 2. The separating fluid such as water would overcome this disadvantage. To eliminate unnecessary calculation and increase the accuracy of results the oil and water level in the two sides of the separating chamber should be the same.

MEN IN THE INDUSTRY'S NEWS

JOHN M. LOVEJOY, president of Seaboard Oil Company, Amiranian Oil Company and Inland Exploration Company, sailed from New York with his family, July 18, on a months vacation in Europe.

A. C. WRIGHT, district geologist for Shell Petroleum Corporation at Tyler, Texas, and his family, are enjoying a vacation trip, which will include visits to Carlsbad Caverns, Grand Canyon and Colorado Springs.

W. C. McGLOTHLIN, independent operator in East Texas and North Louisiana, is vacationing at his ranch near Colorado Springs.

DR. HUBERT G. SCHENCK, Stanford University, California, has entered the employ of Amiranian Oil Company and Inland Exploration Company for a period of 15 months. Dr. Schenck is Associate Professor of Paleontology at Stanford University, from which he has secured a leave of absence in order to render paleontological assistance for those companies during the early phases of their geological studies of the North Iranian and Afghan basins of Tertiary age. Several geologists of the company are already in the field. Dr. Schenck left the United States July 20 on the S.S. "Exeter" for Beirut, from whence he goes by motor direct to Teheran for commencing field operations there. His work will extend to Afghanistan later in the year or in the following spring. His Teheran address will be care of Amiranian Oil Company.

LEE W. RICHHART, 56, retired drilling contractor, died July 17, following a stroke, at his residence in Fort Worth, Texas, where he has resided for 16 years.

RICHARD T. LYONS, vice president of Tide Water Associated Oil Company, Houston, returned last week from Boston and New York.

A. M. McCORKLE, vice president of Stanolind Oil & Gas Company, Houston, has been visiting in Colorado. He returned to Houston last week.

D. A. WASHBURN is chief engineer at the Castor station at Longview, Texas, for Arkansas Pipe Line Company. In our issue of July 12 we listed Elton Sterrett as chief engineer of this station, but his correct title is assistant chief engineer.

PARKER A. ROBERTSON, district geologist for Gulf Oil Corporation at Tyler, Texas, recently returned from a visit with W. C. McGlothlin, independent operator of East Texas and North Louisiana, at the latter's ranch near Colorado Springs.

O. BRECHTEL, Dallas district engineer for Parkersburg Rig & Reel Company, is making an inspection tour of all the important oil producing fields in the Rocky Mountain States and western Canada.

E. N. STANLEY, the Texas Railroad Commission's chief proration officer in the East Texas field, has submitted his resignation it was revealed last week. Rumors have been current for some time that Stanley, center of a number of political rows, wanted to resign. He is expected to enter private business.

LINN M. FARISH, in charge of the drilling program of Amiranian Oil Company, is attending the International Geological Congress at Moscow from where he will go to Iran about September 1 on a tour of the prospective northern oil fields of the said company. Farish will also visit Afghanistan to look at certain sites in the concession of Inland Exploration Company.

VERNE TAYLOR, Turner Valley field supervisor for the petroleum and natural gas division of the department of lands and mines of Alberta, has resigned to join the engineering staff of Royalite Oil Company, Ltd. He first assumed charge of the field in 1929 as an official of the dominion government, and transferred to the provincial government when the province took over the natural resources two years later.

JOHN S. SMITH was re-elected president of Franco Oil Company, Ltd., when shareholders held their annual meeting in Cardston, Alberta, last week. Other officers are W. F. Thorne, vice president and managing director; J. B. Parker, secretary-treasurer, and J. Y. Card and B. Y. Thorne, directors.

GILBERT O. RAASCH, formerly of the geological department of the University of Wisconsin and more recently with Magnolia Petroleum Company, has joined the geological staff of Darby Petroleum Company, with offices in Wichita, Kansas.

JOHN E. "JACK" CHEVIGNY, former Notre Dame University football star and Texas University grid coach, is representing H. H. Weinert, Inc., buyers and sellers of oil royalties, in Mattoon, Illinois.

WILL W. SHANNON, chief engineer for Bayerson Oil Works, Erie, Pa., spent two weeks vacation in the Gulf Coast, making headquarters at El Campo with his nephew, B. L. Shannon, who is with Rio Bravo Oil Company, at Pickett Ridge. He spent one day at Snapper Banks at Freeport, fishing. He caught several kingfish and one 8½-pound dolphin.

Proration Matters

[*Continued from page 12*]

the Long Lake field, Anderson County, from 5000 to 1 to 10,000 to 1. This action was taken at the request of operators who were unable to keep their wells within the prescribed ratio.

Estes Field

The Texas Railroad Commission last week revised its regulations in the Estes field, Ward County, eliminating the following rule:

"(D) No such tests shall be taken unless tubing has been installed in the well to the depth and in the manner prescribed by the general rules and it has been equipped prior to the test to be operated naturally under the usual methods; provided that an operator may at his discretion test the well through tubing, through casing, or both . . ."

El Tanque Field Rules

An order issued provides for 10-acre spacing for wells in the new El Tanque field in Starr County. The commission requires 80 feet of surface casing cemented to the surface, and the oil string set on top of the sand and cemented with at least 75 sacks.

Texas Field Hearings

The Texas Railroad Commission last week held hearings on the Midway, West Beaumont, Heyser, Killam, and North Sweden fields. Every hearing took up the matter of well spacing, with the operators in the majority of areas requesting 10-acre spacing. Other matters, such as casing practices, gas-oil ratio regulations, etc., were considered in some instances.

Midway Field

Phillips Petroleum Company requested 20-acre spacing for wells in the Midway field, San Patricio County, at a hearing before the Texas Railroad Commission last week. R. W. Stuart, engineer for the company, said that two wells had been completed in the field, which appeared to be located on an anticline approximately 1½ miles long and 1 mile wide. A gas cap from 30 to 50 feet thick is located above an 8-foot oil sand, beneath which is water. Stuart testified that production is found at 5340 feet. Conditions below the producing horizon were determined by a well which was drilled to 7015 feet. The saturation in the oil sand ranges from 20 to 30 percent and porosity varies from 25 to 35 percent. A bottom-hole pressure of 2435 pounds was reported at 5300 feet.

Included with the field rules suggested were 800 feet of surface casing cemented back to the surface .The oil string would be cemented 800 feet above the shoe. Operators would be required to install 2½-inch tubing suspended within 50 feet of the bottom of the hole.

The maximum gas-oil ratio recommended was 2000 to 1, with a total displacement factor for high gas-oil ratio wells.

Unit allowables were suggested as

the basis of proration, with 20 acres assigned to each unit plus a 5-acre tolerance which would permit the assignment of an allowance of 25 acres to 1 well in exceptional cases.

West Beaumont Hearing

Operators in the West Beaumont field, Jefferson County, have requested the railroad commission to permit the drilling of 2 wells on each 10-acre unit in the field, each well to be drilled to a separate sand. This twin well program was presented at a hearing before the Railroad Commission last week and was approved by Glenn McCarthy, Sun Oil Company, Stanolind Oil & Gas Company, and other operators in the field.

A higher allowable for the field was requested because, as operators pointed out, the field had never enjoyed the high allowances formerly assigned to flush fields. They asked that they be permitted to produce 125 barrels per well for a reasonable length of time.

Heyser Hearing

Ten-acre spacing for wells in the George Echols extension of the Heyser field was requested at a hearing before the commission. The new area is in Calhoun County, just across the line from the Heyser field in Victoria County.

Operators in the Heyser area did not object to 10-acre spacing in the extension provided it was not extended into the old field where 20-acre spacing has been in effect for some time.

Killam Hearing

Ten-acre spacing for wells in the new Killam field in Webb County was requested at a hearing before the Texas Railroad Commission last week. This program, advocated by Humble Oil & Refining Company, was opposed by O. W. Killam and other independent operators in the field.

The field is producing 21 gravity oil from the Milando sand, and Killam contended that it was too narrow for the wide spacing requested. He insisted that the low pressures were insufficient to move low gravity oil very far through this sand.

The Humble presented testimony to show that there was a gas cap on the west edge of the field and water on the east. They said that the gas-oil contact is found at minus 1130 feet and the water-oil contact at minus 1170 feet. Elevation for the area is 868 feet. This testimony tended to show that if the field were produced at a restricted rate of flow the water and gas would be sufficient to drain oil from the entire area.

North Sweden Hearing

At a hearing before the Texas Railroad Commission last week, operators in the North Sweden field, Duval County, asked for a 10-acre spacing rule for the sand which is producing now. For lower sands which may produce, they asked that 20-acre spacing be provided.

Production now should be protected by 500 feet of surface casing because a water sand is found about 400 feet below, they said. They filed a request to change the name of the field to "Benavides."

Operators requested that the allowable be fixed on 50 percent acreage and 50 percent potential.

Production Allowables

[Continued from Page 11]

where the Bureau of Mines had made its report on the status of storage throughout the country.

Thompson said that although the crude in storage tested by the Bureau of Mines was of quality comparable to that which is going to storage now, reports that none of the gasoline had been lost were erroneous and that the study indicated that the quality of this oil had depreciated. Current production, he said, had a lower gasoline content than that which had been produced some years ago.

Of most importance to Thompson was the statement of the Bureau that there was a wide variation in the amount of oil in storage which had been derived from various states. California had 62 days supply on hand, Oklahoma 133, Louisiana 55, New Mexico 95, Kansas 36, Arkansas 213, and Texas 93. The weighted average daily supply was 97, which would be reduced to 65 days when the deduction for oil in lines and other deductions he had made were subtracted.

He expressed the opinion that Texas storage should be more nearly on a parity with the other large producing states.

Thompson also pointed out that the larger part of the storage above ground was in the hands of a few large companies.

"If a few large companies hold the storage above ground and the State requires oil to be stored below ground, then the tightest monopoly would result. This is forbidden by the Texas Constitution and the Railroad Commission does not intend to aid such a program."

Thompson found that there were many new markets, estimating that 90,000,000 barrels would be required to operate 1,900,000 heating units which have been installed in the past year or two. He pointed out that Diesel engines are rapidly supplanting other engines as a power source and that there is a material increase in the use of motor cars.

Turning to Europe, he pointed out that the demand there is up 11 percent and that the United States is the only free market from which Europe can obtain crude.

Nominations filed by purchasers of Texas crude showed a total of 1,657,313 barrels daily for the month of August.

Many Fields Increased

The old flush fields benefited enormously by the new order. Conroe was raised 9975 barrels daily, and Yates was increased 9964 barrels. The Greta field sand was increased 2664 barrels and the Thompson field was raised 3957 barrels.

Major changes by Texas fields were:

South Texas

Buchanan, new allowable 422, up 140; Clark 690, up 125; Ellison-Young 275, new field; Ezell 200, up 100; Luling Branyon 9300, up 723; Darst Creek, 7110, up 50; Salt Flat 4918, up 136; Dirks 3893, up 570; Greta 14,039, up 2264; Heyser 4058, up 140; Placedo 8970, up 327; Tom O'Connor 15,940, up 4140; Refugio (Fox) 1458, up 410; Refugio (new) 4680, up 973; Refugio (old) 1258, up 151; Aransas 2249, up 374; East Bruni 750, up 225; Charamousca 500, up 150; Clara Driscoll 1400, up 585; Corpus Christi 8261, down 88; Driscoll (Conoco) 1237, up 100; El Tanque 500, new field; Escobas 1076, up 120; Flour Bluff 6100, up 1780; Government Wells (North) 9691, up 109; Government Wells (South) 5101, up 97; Hoffman 1630, up 154; Killam 900, up 450; Labbe 344, up 195; Loma Novia 16,732, up 91; Lopez 8286, up 28; Luby 125, new field; Midway 200, up 178; Plymouth 13,964, up 2612; Premont Prospect 1253, up 929; Sam Fordyce 5867, up 845; Seven Sisters 9345, up 88; Saxet New (deep) 4497, up 419; Saxet New (shallow) 11,381, up 749; Saxet New (Frio) 18,680, up 3231; Sweden North 1440, up 1090; Taft 3877, up 352.

Texas Coast

Amelia 4075, up 883; Anahuac 12,679, up 490; Bay City 2200, up 440; Barbers Hill 13,732, up 182; Conroe 49,182, up 9975; Cotton Lake (south) 500, up 125; Dickinson 3173, up 86; Fannett 1094, up 227; Friendswood 150, new field; Gillock 1729, up 80; Hamman 486, up 150; Hankamer 1364, up 188; West Hardin 125, new field; Hastings 18,800, up 6337; Hull (new) 3400, up 322; Joe's Lake 400, up 200; Lochridge 900, up 368; Magnet 425, up 200; Manvel Miocene 5204, up 620; Manvel Oligocene 4796, up 725; Markham 1574, up 177; Nome 1907, up 254; Old Ocean 1082, up 365; Pierce Junction 3324, up 191; Segno 1875, up 500; Silsbee 1365, up 273; Thompson 15,225, up 3957; West Columbia 2194, up 500; West Beaumont 1223, up 452.

East Central Texas

Cayuga 8610, up 490; Long Lake 1515, up 165; Rodessa 37,718, up 1670; Sulphur Bluff 5100, up 823; Talco 30,067, up 2639; Trinity 1087, down 100.

The commission changed the gas-oil ratio of the Long Lake field, Anderson county, from 5000 to 10,000 cubic feet per barrel. It revoked a rule of five months ago prescribing the method for taking potential tests in the Estes field, Ward County.

West Texas

North Cowden 8487, up 393; Crane-Cowden 2334, up 336; Duggan 150, up 100; Eaves 185, up 100; Emperor 1364, up 180; Estes 11,245, up 3595; Foster 2535, up 711; Fuhrmans 1165, up 367; Goldsmith 12,500, up 5033; Gulf-McElroy 4625, up 829; Harper 390, up 105; Henderson 4090, up 200; Howard-Glasscock 16,190, up 300; Iatan-East Howard 7363, up 625; Kermit 20,905, up 1049; Keystone 3380, up 904; Means 2405, up 410; Sand Hills (ordovician) 360, up 100; Seminole 150, new field; Taylor-Link 1400, up 264; North Ward 8080, up 1185; South Ward 24,880, up 8714; Wasson 200, new field; Yates, 35,239, up 9964.

West Central Texas

South Jack 11,146, up 1546; Jones 7489, up 639; Shackelford 8399, up 199; Stephens 4302, up 102; Upton (McCamey) 12,634, up 534; South Young 6354, up 454.

Outlook Is Dimmed

TEXAS AUGUST ALLOWABLE UPPED 100,000 BARRELS

A LITTLE dust has percolated into the rosy outlook of the oil market. The dust seems to have started out in the Western region whence dust is expected, as Col. E. O. Thompson was the instigator and he got much of the idea when attending the compact meeting at Santa Fe, New Mexico.

His idea, following that meeting, is that there is some question about crude stocks being so large as the figures indicate, and also that his state of Texas is not getting a proportionate share of the available market for crude oil. Therefore the allowable for Texas for August has been increased 100,000 barrels above the July figure.

Wait Reaction Elsewhere

How far this increase idea will extend will be revealed when the reaction of other states is recorded.

The Bureau of Mines upped its estimate by 40,000 barrels to make the figure for August 3,462,900 barrels daily and an all-time high for the United States.

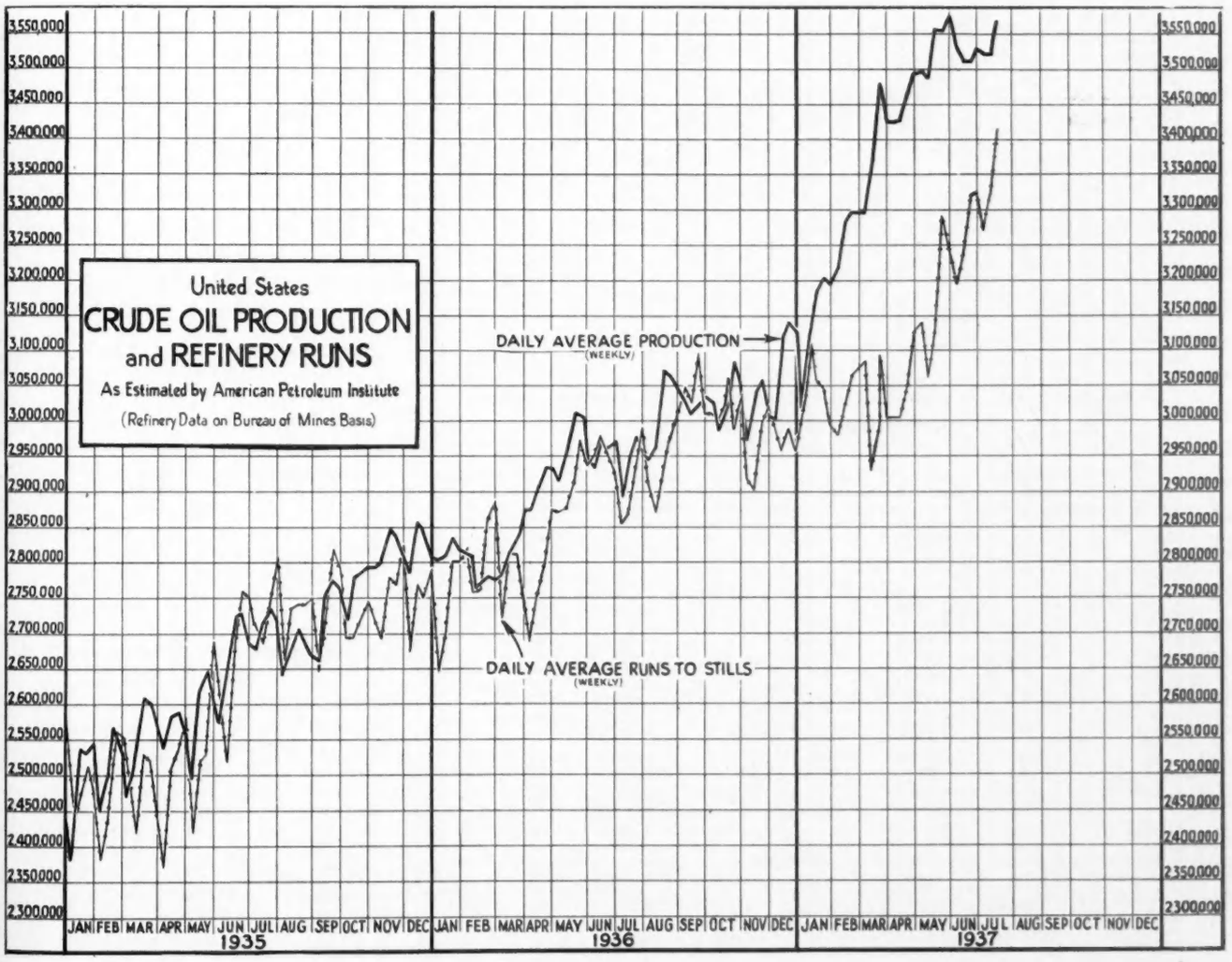
Continuation of the normal ratio of excess over the bureau's recommendation, plus the Texas demand for a place in the sun, is calculated to push average production up toward 4,000,000 barrels daily in August. And that is a lot of oil.

Consumption May Increase

Consumption of gasoline and other products continues at record figures and shows tendencies to increase during the pending mid-term of the tourist season. But the market for crude oil is limited by the capacity of stills. Currently the refineries are operating above their rated capacity; many smaller plants are staying hot many hours beyond usual cleaning time, and eventually they will have to stop.

Adding to Stocks

Despite record consumption, and regardless of the authenticity of storage figures, simple arithmetic shows that stocks are being added each week when the output of wells is greater than crude oil run to stills. How much oil should be held above ground seems never to have been satisfactorily determined, but indicated ability of producers to increase the available supply at the will of proration authorities suggests the idea that the margin between potential and current production is al-



most, if not in fact, equal to above-ground storage.

This situation has not as yet brought about weakness in the crude price structure, but it has lessened its strength.

Gasoline Uncertain

Another weakening factor is uncertainty in gasoline prices at a time when all conditions indicate that they should be rising. Filling stations are delivering gasoline to automobiles in greater volume than ever in history, but there seems to be a tendency to acquire the profit of this prosperity through increase in volume rather than show a strong buyers' market by the increases in prices that normal trading indicates when such conditions obtain. Only on the Eastern coast has there been an increase in costs to the consumer. That motorists are not deterred by a half-cent more may lend encouragement in other quarters.

The latest report compiled by the American Petroleum Institute shows daily average runs to stills at 3,415,000 barrels daily, an increase of 90,000 barrels daily over the figure for the previous period which marked the all-time record. The volume of gasoline thus made lacked 1,430,000 barrels of being sufficient to meet consumption, as stocks of gasoline declined by that figure to 72,546,000 barrels.

CRUDE OIL PRICES

Crude oil prices late last week remained the same as shown in The Oil Weekly of July 5, 1937, page 58, with exception of new postings for the Refugio and Mirando districts, South Texas. The new schedules for the Refugio and Mirando districts, effective July 6, are shown on page 56 of The Oil Weekly, July 12.

Weekly Trends of United States Production and Stocks

(Figures American Petroleum Institute, except Crude Stocks, Bureau of Mines)

WEEK ENDED	Crude Oil Production (Barrels Daily)	Crude Runs to Stills (Barrels Daily)	Crude Oil Stocks (Barrels)	Gasoline Stocks (Barrels)	Gas & Fuel Oil Stocks (Barrels)
January 2, 1937	3,121,400	3,030,000	287,659,000	62,661,000	106,330,000
January 9	3,117,800	3,110,000	286,912,000	65,402,000	105,971,000
January 16	3,184,650	3,045,000	286,044,000	66,559,000	104,841,000
January 23	3,205,150	3,055,000	285,211,000	68,180,000	103,441,000
January 30	3,194,050	2,995,000	285,384,000	69,540,000	102,078,000
February 6	3,220,750	2,980,000	286,116,000	70,535,000	101,136,000
February 13	3,286,050	3,020,000	286,158,000	73,585,000	100,735,000
February 20	3,295,950	3,065,000	287,574,000	74,798,000	99,391,000
February 27	3,296,100	3,085,000	288,121,000	78,786,000	99,534,000
March 6	3,298,800	2,930,000	289,611,000	80,102,000	99,115,000
March 13	3,372,850	2,985,000	290,613,000	81,236,000	98,964,000
March 20	3,448,150	3,095,000	291,555,000	81,623,000	97,287,000
March 27	3,431,300	3,060,000	293,587,000	*83,538,000	96,591,000
April 3	3,422,350	3,005,000	297,374,000	83,157,000	95,805,000
April 10	3,426,300	3,005,000	297,468,000	82,579,000	94,581,000
April 17	3,463,550	3,055,000	298,932,000	82,703,000	94,472,000
April 24	3,466,400	3,125,000	300,737,000	82,303,000	94,100,000
May 1	3,497,450	3,140,000	303,249,000	81,407,000	94,291,000
May 8	3,489,200	3,065,000	304,148,000	81,469,000	94,874,000
May 15	3,551,950	3,135,000	305,365,000	80,378,000	95,316,000
May 22	3,550,450	3,290,000	304,971,000	79,827,000	95,111,000
May 29	*3,573,000	3,245,000	306,445,000	78,758,000	96,139,000
June 5	3,538,150	3,195,000	307,223,000	77,494,000	97,402,000
June 12	3,515,900	3,250,000	307,199,000	76,996,000	98,158,000
June 19	3,510,950	3,320,000	307,465,000	76,574,000	99,215,000
June 26	3,529,600	3,235,000	307,679,000	75,427,000	100,395,000
July 3	3,525,650	3,270,000	308,744,000	75,330,000	101,564,000
July 10	3,520,750	3,325,000	.....	73,976,000	103,537,000
July 17, 1937	3,557,950	*3,415,000	.....	72,546,000	105,085,000
July 18, 1936	2,982,625	2,925,000	.....	66,134,000	106,999,000

*All time peak.

Summary of Wells Completed in the United States Week Ending July 24, 1937

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total, 1937	Total this Date, 1936
Alabama	.....	.....	.....	.....	.....	1	2
Arkansas	.....	.....	.....	.....	.....	48	56
California	41	35	1	5	20,825	790	642
Colorado	.....	.....	.....	.....	.....	6	6
Florida	.....	.....	.....	.....	.....	.....	1
Illinois	.....	.....	.....	.....	.....	85	4
Indiana	.....	.....	.....	.....	.....	70	128
Kansas	80	51	7	22	61,661	1,449	912
Kentucky	10	6	1	3	300	191	137
Louisiana	19	14	1	4	10,767	478	584
Michigan	31	24	.....	7	13,043	508	433
Mississippi	.....	.....	.....	.....	.....	6	5
Montana	5	3	1	1	140	97	79
Nebraska	.....	.....	.....	.....	.....	.....	.....
New Mexico	20	18	1	1	14,760	401	323
New York	.....	.....	.....	.....	.....	6	.....
Ohio	25	4	14	7	357	809	1,075
Oklahoma	64	44	2	18	22,203	1,820	1,652
Pennsylvania	6	3	1	2	26	103	.....
Texas	319	247	10	62	365,531	8,466	7,012
Utah	.....	.....	.....	.....	.....	.....	.....
West Virginia	24	5	15	4	21	498	385
Wyoming	2	.....	.....	2	.....	59	36
Total this week	646	454	54	138	509,634	15,891	13,472
Total last week	606	429	52	125	527,243	.....	.....
Total this year	15,891	10,999	1,281	3,611	13,343,599	.....	.....

TAX PEAK

FEDERAL revenues from the gasoline tax rose to new post-depression levels during the fiscal year which ended June 30, last, with total receipts of $196,532,813.58, an increase of more than $19,000,000 over the $177,339,587.36 collected in the fiscal year 1936, it was announced July 23 by the Bureau of Internal Revenue.

With the exception of the processing taxes, on which the rate was dropping during the fiscal year 1936, all the oil taxes showed increases, receipts from lubricating oils jumping $4,360,170, from $27,102,831.57 in 1936 to $31,463,002.16 in the year just ended, and pipe line receipts increasing $1,450,100, from $9,793,995.42 to $11,244,095.87, the bureau reported. Collections from the processing taxes dropped $269,571 from $1,163,754.57 to $894,182.66 for the month of June; gasoline and lubricating oil tax collections were under the corresponding month last year and the latter also was slightly below the May level, the figures disclosed. Collections from the gasoline tax amounted to $17,561,468 for the month, against $16,287,064 for May and $17,982,830 for June, 1936, while the lubricating oil tax returned $2,950,212 against $2,971,863 in May and $3,258,687 in June of last year.

Receipts from pipe line transportation were $960,554 which, while under the May collections of $976,450, were well ahead of the $928,015 of last June, while the processing taxes returned $82,210 against $75,609 the preceding month and $79,212 in June, 1936.

Figures for the first half of the current calendar year show that all four taxes are running ahead of the comparable period in 1936, gasoline returning $15,848,996 against $80,038,761; lubricating oils, $15,848,996 against $13,371,541; pipe line transportation, $5,860,713 against $5,040,225; and processing $456,157 against $421,733.

Comparison of Permits Granted for New Wells

STATE	Week Ending July 24	Total this Mo.	Total this Year	Total this Date Last Year	1936 Year Total
Arkansas	4	24	120	53	103
California	28	102	874	572	1,054
Louisiana	18	81	681	655	1,107
Kansas	99	252	1,549	1,004	1,873
Michigan	25	64	557	417	762
Oklahoma	36	224	1,700	1,680	2,594
Texas	442	1,443	10,408	8,390	15,582
Total	652	2,190	15,889	12,771	23,075

Another Record High

3,586,775 BARRELS DAILY IN UNITED STATES LAST WEEK

BY the large margin of 13,775 barrels, a new peak for production of crude oil in the United States was established during the week ending July 24 when fields of the nation yielded a total of 3,586,775 barrels per day.

The previous record daily output for the country was established during the week ending May 29, when the figure reached 3,573,600 barrels.

Production for the week ending July 24 is 162,972 barrels above the recommended daily average of the Bureau of Mines for July, which is 3,423,800 barrels. Every major producing state in the union contributed to the excess.

Texas Up

Texas was up nearly 10,000 barrels to 1,429,700 barrels per day, against the recommended figure of 1,375,100 barrels. Oklahoma's average of 637,275 barrels per day during the week ending July 24 was more than 7000 barrels in excess of the bureau's recommendation. Kansas, jumping from 197,450 barrels to 204,450 barrels during the week just closed, was nearly 9000 barrels over the recommended figure. California's gain was 10,000 barrels, giving it a daily production of 672,000 barrels, or an overage of 66,500 barrels.

Even the Rocky Mountain states of Wyoming, Montana and Colorado, which generally hue close to the Bureau of Mines figures, exceeded the mark by more than 2000 barrels in establishing a daily production of 75,950 barrels, an increase of 2650 barrels per day over the average established during the week ending July 17.

Well completions during the week just closed totaled 646, of which 454 were oil wells, 54 gas wells, and 138 failures. Combined initial production of the producers was 509,634 barrels. The previous week well completions totaled 606, with 429 oil wells, 52 gas wells, and 125 failures. Initial production, however, was greater, totaling 527,243 barrels.

SITUATION NOT BAD

Los Angeles.—The storage situation with reference to crude oil and petroleum products in California is not bad at all, notwithstanding the overproduction situation. For the first five months of this year the total storage of all products dropped from 136,518,362 barrels to 125,030,249 barrels. Storage of heavy crude oils including fuel oils dropped almost 2,000,000 barrels during that period. Stocks of light crude oil, gasoline bearing, decreased from 38,734,077 barrels to 33,370,816 barrels in the 5-month period. Gasoline stocks were up from 12,889,851 barrels at close of May last year to 13,499,045 barrels as of May 31, 1937.

California has no law which can force adherance to a low production quota. The only state law that is enforcible is that gas must not be wasted. Naturally this does not apply to pumping wells. Therefore, several fields in the state are overproducing.

Frequent attempts have been made to get the producers to curtail to the figure set for them, but without much success. The producers realize they could expect an increase in the posted price if they would observe their quotas, but apparently they prefer to produce open in many instances and receive prevailing prices. For these reasons it is extremely doubtful if California producers can expect a better price for some time to come.

United States Crude Oil Production

Estimates Compiled by The OIL WEEKLY

DISTRICT OR STATE	Bureau of Mines Recommendation (Daily in July)	ACTUAL PRODUCTION: BARRELS DAILY FOR WEEK ENDING July 24	July 17
TEXAS:			
Texas Panhandle	.....	78,650	77,200
North Texas	.....	73,200	72,800
West Central Texas	.....	33,850	33,900
West Texas	.....	200,650	198,900
East Central Texas	.....	126,000	122,200
East Texas Fields	.....	475,400	468,600
South Texas	.....	237,800	237,300
Texas Gulf Coast	.....	204,150	208,900
Total Texas	1,375,100	1,429,700	1,419,800
OKLAHOMA—			
Oklahoma City	.....	151,725	144,775
Seminole Area	.....	103,700	126,400
Crescent	.....	6,775	11,750
Lucien	.....	16,075	15,900
Fitts	.....	100,425	96,650
Edmund	.....	18,450	18,600
Moore	.....	10,900	10,750
Others	.....	229,225	207,075
Total Oklahoma	629,700	637,275	630,900
KANSAS—			
Ritz-Canton	.....	5,700	5,750
Chase	.....	8,650	7,525
Hollow-Nikkel	.....	2,975	3,050
Sedgwick	.....	4,025	4,025
Burrton	.....	13,900	13,950
Lorraine	.....	4,825	4,350
Russell County	.....	32,325	32,025
Silica	.....	22,625	21,200
Others	.....	109,425	105,575
Total Kansas	195,600	204,450	197,450
LOUISIANA—			
North Louisiana	.....	86,075	84,350
South Louisiana	.....	172,250	168,700
Total Louisiana	253,000	258,325	253,050
ARKANSAS	28,400	29,075	29,250
CALIFORNIA—			
Long Beach	.....	58,500	59,500
Santa Fe Springs	.....	44,000	43,500
Huntington Beach	.....	39,000	37,500
Dominguez	.....	28,500	27,500
Inglewood	.....	15,500	17,500
Ventura Avenue	.....	34,500	33,000
Seal Beach	.....	9,500	9,000
Midway-Sunset	.....	77,000	75,500
Elwood	.....	8,500	8,500
Kettleman Hills	.....	80,000	78,500
Mountain View	.....	18,500	18,500
Playa del Rey	.....	8,500	8,500
Wilmington	.....	51,000	49,000
Others	.....	199,000	196,000
Total California	605,500	672,000	662,000
MOUNTAIN STATES—			
Wyoming	52,900	54,100	51,200
Montana	16,200	17,250	17,800
Colorado	4,700	4,600	4,300
Total Rocky Mountain States	73,800	75,950	73,300
NEW MEXICO	100,800	115,100	114,400
EASTERN STATES	122,100	121,200	119,800
MICHIGAN	39,800	43,700	42,900
Total United States	3,423,800	3,586,775	3,542,850

WORLD DEVELOPMENT and TECHNOLOGY

Edited by
WM. V. GROSS, Associate Editor

56 Tests Drilling

WEST EXTENSION LOOMS FOR TURNER VALLEY OIL FIELD

TWO wells were spudded in the Turner Valley field of Alberta, Canada, last week, bringing drilling tests in that area to 27, with two others about to spud. Reports from other Alberta fields revealed 26 tests active on 20 scattered structures.

Okalta Oils, Ltd., spudded No. 6 and was drilling at 100 feet as the week closed. Location is Legal Subdivision 3, Section 30, Township 18, 2-W5, two miles west of the big producers on the Turner Valley west flank on what is thought to be a westerly fold of the main structure. The lime is expected at about 4500 feet, 2000 feet shallower than at Monarch Royalties test now nearing completion.

Test of Spy Hill Royalties, Ltd., was spudded by Anglo-Canadian Development & Holding Company on Legal Subdivision 16, Section 20, Township 18, 2-W5, and is drilling below 160 feet.

West Extension Looms

Monarch Royalties made over 200 feet of new hole during the week and was below 6875 feet, about 350 feet in the Madison limestone. Rich showings of oil are reported and it is expected the well will make a good producer. The test is west of present producers and may materially extend the proven area of the field in that direction.

Richland Oil Company's No. 3 and Royalite Oil Company's Sterling-Pacific 5, both in proven areas, are finding the lime harder than at Monarch and are expected to complete somewhat later than the more westerly test. Richland 3 was drilling with standard cable equipment below 5685 feet, about 75 feet in the lime, and Sterling-Pacific was drilling at 6695 feet, about 80 feet in the lime, using rotary equipment.

Acid for the B. and B. Royalties well, largest in Canada when completed early this year, has arrived on the field and treatment will be given this week. Production is about 600 barrels a day.

To Drill Three

A drilling program comprising two wells on the Wainwright structure and one on Taber, recently proved by Plains Petroleums' No. 1, was anounced by Beacon Petroleums, Ltd., Wainwright holdings of the company consist of Legal Subdivisions 15 and 16, Section 21, Township 45, 6-W5, being 80 acres in the immediate vicinity of wells producing crude oil at depths of some 2000 feet. Taber acreage consists of the east half of Section 16, Township 10, 16-W4, with the exception of Legal Subdivision 16, in addition to Legal Subdivision 5, Section 9, Township 10, 16-W4—a total of 320 acres. Directors of the company are Dr. T. Forrester Macdonald, Jas. H. Ogilvie, Col. Frederick C. Jamieson, Jonathan E. Bagley, Robert Spencer, and Stanhope P. Williams, all of Edmonton; J. MacWilliam, Calgary, and Ted Sundal, Taber.

Derrick and machinery for Plains Petroleums' No. 2 on the Taber structure, to replace that destroyed a week ago when the gas flow was ignited, is being assembled and it is expected to resume drilling at 2300 feet within 10 days. Casing was set to 2260 feet before the fire.

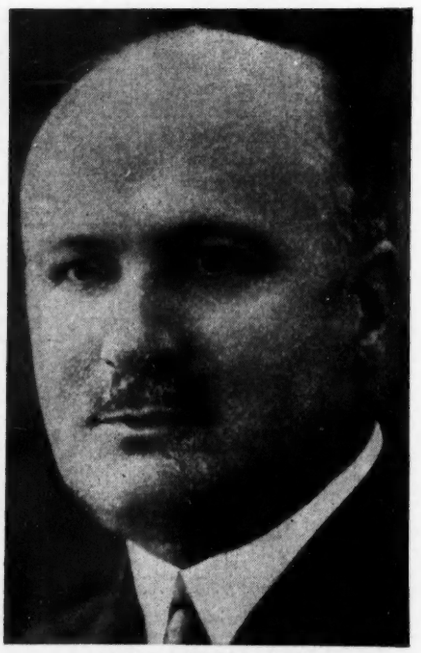
Several Nearing Completion

Following is the standing of other Turner Valley active tests as the week closed: Brown Oil Corporation's No. 1, drilling at 5310 feet; No. 2, drilling at 5043 feet; No. 3, drilling at 1675 feet; Command Oils, waiting casing at 810 feet; Commoil, drilling at 5000 feet; Davies Petroleums No. 1, drilling at 2810 feet; No. 2, drilling at 5403 feet; Firestone Petroleums, drilling at 3744 feet; Four Star Petroleums, drilling at 4173 feet; Globe Royalties, cemented at 1450 feet; Granville Oils, drilling at 5293 feet; Home Oil Company, drilling at 2068 feet; Mercury Royalties, drilling at 5080 feet; Mercury Oils No. 8, drilling at 4908 feet; Model-Spooner-Reward Royalties, drilling at 3875 feet; National Petroleum Corporation's No. 1, drilling at 4260 feet; No. 2, drilling at 2700 feet; Phillips Petroleums, drilling at 3700 feet; Prairie Royalties, drilling at 5100 feet; Richland Oil Company's No. 1, drilling at 3150 feet; No. 2, drilling at 5060 feet; Rich-Well Oil Company, cementing casing at 1190 feet; Royal Crest Petroleums, drilling at 4228 feet; Royal Canadian Oils, drilling at 571 feet; Royalite Oil Company's Sterling-Pacific 6, drilling at 1923 feet; Share Royalties, drilling at 5300 feet; Sunburst Oil Company, waiting drill pipe at 2610 feet; Sunset Oils, waiting rotary equipment at 3044 feet; Three Point Petroleums, drilling at 3556 feet; Vulcan Oils-Brown, drilling at 1050 feet; West Crest Petroleums' No. 1, temporarily idle at 4300 feet; West Flank Oil Company's No. 1, bottomed at 3091 feet, reaming to 1880 feet; No. 2, drilling at 1333 feet; No. 3, rigging machinery; West Turner Petroleums, waiting boilers.

26 Wildcats Going

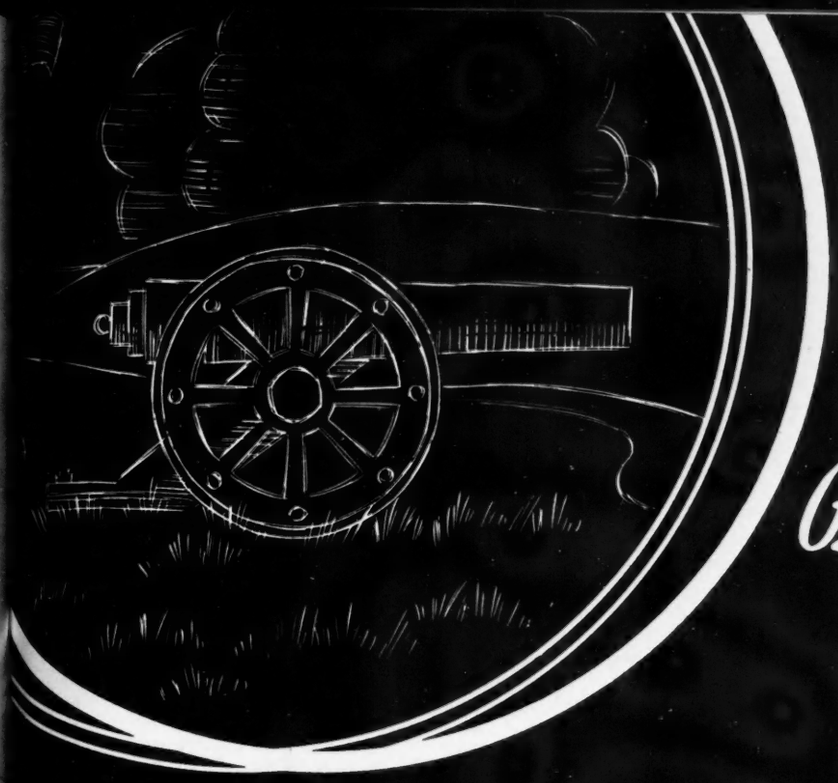
Following is the status of wells on other West Canadian structures: On Birch Ridge, Elbow Oil Company, drilling at 5180 feet; on Calling Valley, Anglo-Indian Oils Corporation, building derrick; Sentinel Oils, resuming

JOSEPH FILHOL



GETS APPOINTMENT

Joseph Filhol, who served as executive secretary for the Second World Petroleum Congress held in Paris in June, has been appointed secretary of the permanent bureau of the congress which will direct from London offices plans for the Third World Petroleum Congress to be held in 1940.



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from 5850 feet; on Cardston, Franco Oils, drilling at 3700 feet; on Del Bonita, Sunshine Oils, cemented at 5252 feet; Terminal Oil Company, testing at 5112 feet; on De Winton, Marquis Oil Company, resuming from 4500 feet; on Duncan, Spindletop Oils, drilling at 400 feet; on High River-Aldersyde, Ranchmen's Gas & Oil Company, drilling at 7155 feet; on Highwood-Sinclair, Banner Oils, drilling at 2810 feet; South End Petroleums, drilling at 4765 feet; on Hunter Valley, Hunter Valley Oil Company, drilling at 8037 feet; on Kootenay Dome, Roxana Petroleums, drilling at 3000 feet; on Lethbridge, Lethbridge Petroleums, drilling at 1305 feet; on Moose Dome, Moose Oils, drilling at 1250 feet; on New Valley, New Valley Oil Company, drilling at 8200 feet; on Pincher Creek, Weymarn Petroleums No. 2, bailing at 5960 feet; on Steveville, Anaconda Oil Company, drilling at 195 feet; on Taber, Plains Petroleums' No. 2, building new derrick at 2300 feet; No. 3, ready to spud; on Twin River, Del Bonita Associated Oils, rigging at 3990 feet; on Wainwright, Altoba Oils, erecting derrick; Battleview Oils, drilling at 1350 feet; on Watertown, Oil City Royalties, waiting at 2565 feet; on Watson Structure, Mar Jon Oil Company, shut down for repairs at 5430 feet; Mar Jon-Maxmont Syndicate, drilling with no depth reported; Raven Oils, idle at 1225 feet.

Need New Reserves

MOST OLDER FIELDS IN EAST INDIES SHOWING DECLINES

Although the number of wells drilled and the production of crude oil in Netherlands East Indies has consistently increased for the past four years, discovery and development of new reserves there is desirable, according to statements contained in a paper submitted to the Second World Petroleum Congress in Paris in June by S. van Dorsser, petroleum engineer.

Van Dorsser's paper, titled "Development of the Petroleum Industry in the Netherlands East Indies," declared most of the recent increase in production, from 6,045,631 metric tons in 1935 to 6,314,754 tons in 1936, was due to new work in the fields of south Sumatra.

Extracts from Van Dorsser's paper follow:

Within the Kingdom of the Netherlands crude oil is produced in the East Indies only.

In this area the main operating companies as far as actually producing oil are Bataafsche Petroleum Maatschappij (Royal Dutch-Shell Group), the Nederlandsch-Indische Aardolie Maatschappij (Bataafsche Petroleum Maatschappij and N. E. I. Government) and the Nederlandsche Koloniale Petroleum Maatschappij (Standard-Vacuum Group).

The producing areas are North-Sumatra (Pangkalan Brandan), South-Sumatra (Pladjoe-Soengei Gerong), Java (Tjepoe), East-Borneo (Balik Papan), Tarakan (Tarakan) and Ceram (Boela).

On January 1, 1937, the number of men directly employed by the oil industry in the Netherlands East Indies (including exploration, production and refining work, but exclusive of transportation and local sales organization), amounted to 1448 whites and 24,147 natives.

Drilling Activity

	Number of wells drilled			
Area	1933	1934	1935	1936
North Sumatra	14	6	1	16
South Sumatra	25	78	125	173
Java and Madoera	16	10	5	20
East Borneo	20	24	22	20
Tarakan	—	7	15	11
Ceram	1	1	—	2
Total	76	126	168	242

During the period under consideration drilling activity apparently shows a steady increase, particularly in southern Sumatra.

Evidently this has been necessary to maintain production on its existing level and, where possible, to raise this level.

This aim was attained largely by drilling new wells in the older fields and partly also by the development of a few more recently discovered structures.

In judging the above figures it should also be well realized that in the years immediately preceding the period 1933-1936, drilling activity had been very low on account of production requirements being affected by the economic depression.

Production has been steadily increasing during the four years under consideration. The district mainly responsible for this increase was South Sumatra, whereas the other districts were more or less successful in maintaining their 1933 level, some of them even showing a reduction.

In order to cope with probably increasing future demands and to make up for the approaching exhaustion of some of the older fields, the discovery and development of new reserves is, of course desirable.

The more important productive fields for the period under consideration were:

North Sumatra: Perlak, Poeloe, Pandjang, Rantau, Serang Djaja.

South Sumatra: Badjoebang, Benakat, Djirak, Kloeang, Limau, Soeban, Djerigi, Talang Akar-Pendopo, Tempino.

Java: Kawengan, Ledok, Nglobo.

East Borneo: Louise, Sambodja.

Tarakan: Djoeata, Pamoesian.

A large number of the East Indian fields has passed the stage of maximum production. Some are rapidly nearing the stage of exhaustion. Out of the above list the better fields still holding good promises for the future, are mainly Kawengan, Talang Akar-Pendopo, Rantau and Tempino.

With few exceptions the rotary drilling method is practically the only one applied.

As regards production, the majority of wells are produced by pumping, although the larger part of the total volume of oil produced is obtained from flowing and gaslift wells in the younger fields.

An outstanding development in the course of the last few years is the gradual improvement and rationalization of drilling practices. Average drilling speeds have substantially increased. The introduction of new and heavier drilling equipment, formation testers, electrical logging, etc., have been instrumental to this end. Diesel driven rotary outfits have recently been introduced which, in connection with difficulties of transportation encountered in the more remote areas, must be considered as a step with important aspects.

The development and exploitation of the newer fields (location grids, distribution of oil withdrawal over the area, conservation of reservoir energy, etc.) is being systematically directed along scientific lines.

The fact that each field is being operated by one company only, hence without any local, direct competition, means a very favorable situation for the above scientific and economic production methods.

PREDICTS INCREASE

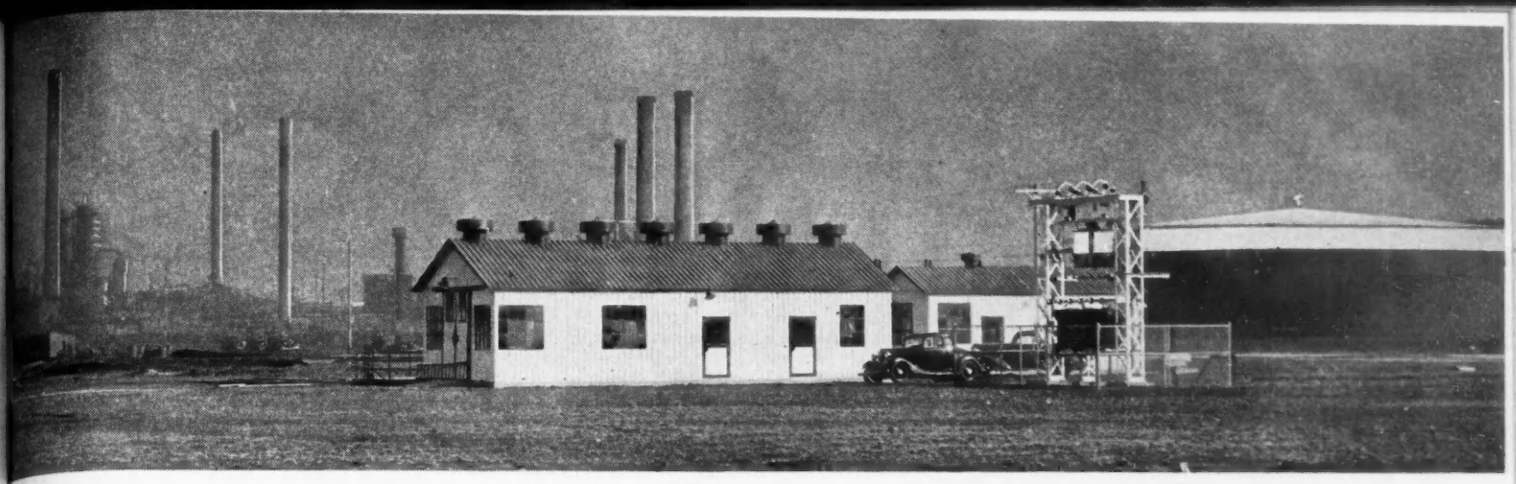
Halliburton says Canada will supply local needs

Prediction that the Alberta, Canada, oil industry would soon reach a "transitional period" when the supply of oil would meet demands for local consumption and the struggle for foreign markets would commence, which in all possibility would result in a pipe line to Vancouver, was made before Turner Valley oil men recently by E. P. Halliburton of Duncan, Oklahoma, president of Halliburton Oil Well Cementing Company.

Halliburton, who was accompanied on the Canadian trip by his brother,

NETHERLAND INDIES OUTPUT

	Production in Metric Tons.			
Area	1933	1934	1935	1936
North Sumatra	730,439	1,001,442	889,411	689,963
South Sumatra	2,165,724	2,462,999	2,822,178	3,354,115
Java et Madoera	467,075	489,585	466,390	503,394
East Borneo	1,221,597	1,094,142	1,008,965	1,028,519
Tarakan	785,195	821,175	816,825	745,039
Ceram	38,205	36,680	41,862	75,045
Total	5,408,235	5,906,023	6,045,631	6,314,754



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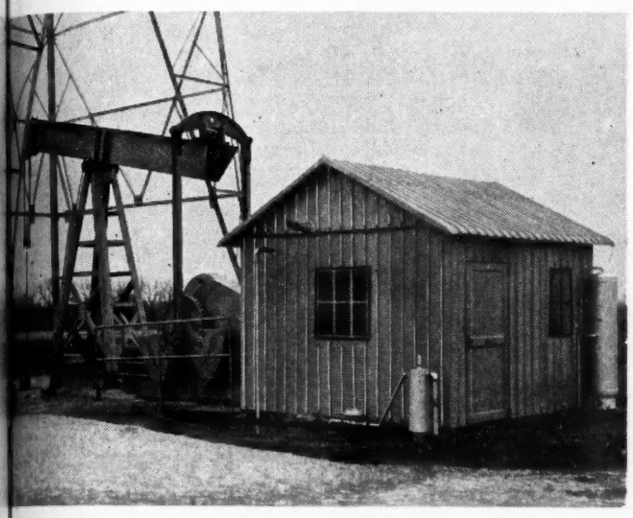
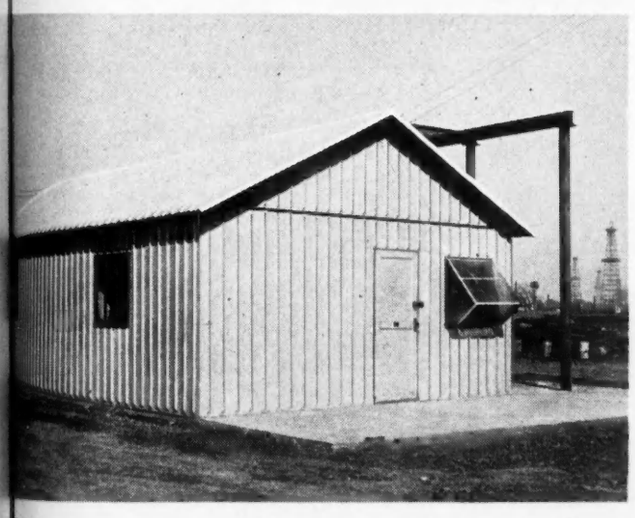
However, in the case of Butler Steel Buildings, the term ready-made does not imply unwieldy limitation in shapes, sizes or adaptability. So basic is the section-unit design that Butler Engineers quickly and economically tailor-measure the type of building that fits any oil industry outpost sheltering requirement. In their order from top to bottom the photographs show a few of the uses to which Butler Steel Buildings have been put in recent months:



Pipe Line Pumping Station
White Eagle Pipe Line Co.
Augusta, Kansas

Pumping Engine House
Carter Oil Co.
Lorraine, Kansas



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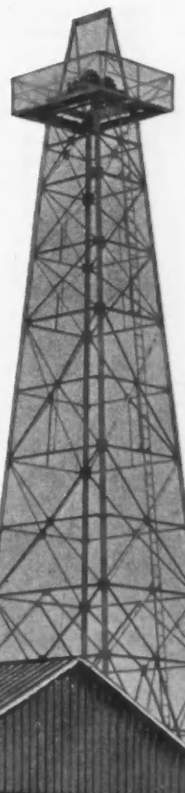

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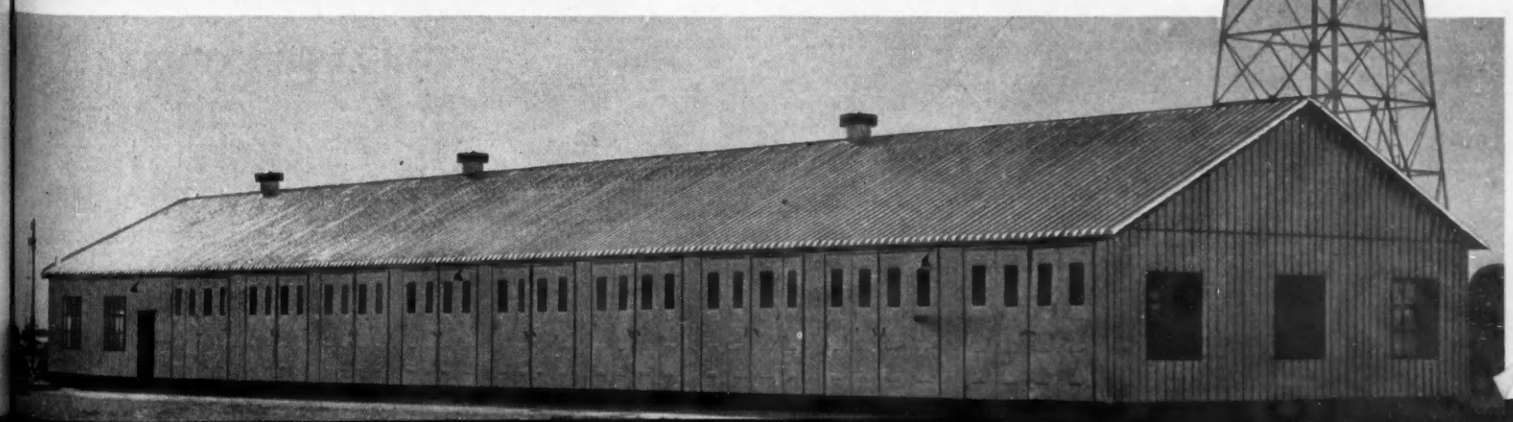


John, vice president of the company, predicted that "some really big wells" would be opened in the Turner Valley field. He deplored the waste of gas in the field, urging conservation so that the life of the field would be extended.

"I think you are doing the foolish thing, burning the gas residue from absorption plants. Thousands of gallons of gasoline could be recovered through using compressors," he said, explaining that the residue gas could be pumped into the field to keep up the rock pressure. "You might not need it yourselves, but you might leave it for posterity—it is a natural resource," he said.

The speaker urged a pro rata basis of using gas to lift oil from the wells, with return of gas to the field, which would enable regulating flow from the wells.

CARDENAS SAYS
Legitimate rights of foreign operators safe

Asked to state the Mexican government's policy toward oil companies and just how the General Administration of National Petroleum, organized to replace Petromex, the semi-official oil company, will affect other oil companies, the government's press and publicity department replied by quoting the statement President Lazaro Cardenas made when plans for the General Administration were announced:

"The reorganization of Petromex has as its ends impulsing development of the oil industry and will not affect the legitimately acquired rights of foreign companies."

Federal Reserves Expanded

Two more large tracts of the Amatlan oil zone, Vera Cruz, which has been long prominent in litigation, have been incorporated in the federal oil reserves. One tract is of Lot 176, about which many a legal battle has been fought. This incorporation of 38 hectares, was ordered when application for rights to the property by the Agwi, Transcontinental and Capuchinas oil firms were turned down.

The other tract is 6 hectares of Lot 226. It was incorporated when Mexican interests withdrew applications for concessions to the land.

Three other tracts, comprising nearly 6000 hectares and a producing well, have been added to the reserves. The property includes 500 hectares in Comalcalco and Cardenas municipalities, Tabasco state, and was incorporated when the Mexican Eagle Oil Company cancelled applications for concessions to it. The property including the well, Tecnanapa 1, is of 2900 hectares in Minatitlan municipality, Vera Cruz state, and the other tract, 1971 hectares, is Lot 9 of Comunidad de Pobladores de Paras in Nuevo Leon state, near the American border.

MEXICO
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MAY		
Gulf Coast Mahuaves 0.31, Mahuaves Oriental, Panuco, Vera Cruz.....	*	2250
American International, Altamira 102-A Altamira, Tamaulipas	*	1930
Petromex, Petromex 23, Altamira, Tamps.	*	1937
Hamilton & Devine, Delgado No. 6, Altamira, Tamps.	38	1814
JUNE		
Petromex, Petromex 18, Panuco, Vera Cruz	*	1830
Petromex 3, Minatitlan, Vera Cruz	151	2205
Petromex 22, Tantima (new zone) Vera Cruz	202	2917

*Failures; †Junked; ¶Million cu. ft. gas.

THREATENS EMBARGO
Tamaulipas is trying to collect taxes from Eagle

Tamaulipas state in Mexico is after Mexican Eagle Oil Company again. The state recently cancelled two old concessions of the company, on grounds that they constitute disproportionate privileges for the company and is to seek to collect from the company taxes under the franchises from 1916 to 1936.

The state now threatens to embargo Eagle refineries, office and other buildings at Ciudad Madero, in the Tampico sector, if the firm does not pay 255,836.23 pesos (about $70,000) Tamaulipas claims as peridal taxes on the land the edifices occupy. The Eagle obtained a temporary injunction from a Tampico court against execution of the state's demands which it claims are unjustified.

In addition to the above difficulty, Mexican Eagle Oil Company has asked a local court for an injunction against the ministry of national economy consummating its order to incorporate into the federal oil reserves a tract of the firm's land in Vera Cruz state. The Eagle contends that the ministry's proposed action is unconstitutional.

PRODUCTION DOWN
Mexican strike cuts June yield to 3,337,965 bbls.

The recent general oil industry strike in Mexico, the brunt of which was borne by June, for it obtained during eight days of that month, had a bearish effect on production as it is shown by the estimate of the ministry of national economy that the output in that month fell to 3,337,965 barrels. The average production per day for the first five months of this year was 136,420 barrels, and the total output for that period was 20,599,516 barrels. June, 1936, production was 3,167,380 barrels.

The ministry rectifies the production for last May, which had a four-day shutdown because of the strike, at 3,837,950 barrels.

CANCELS FRANCHISES

Holding that two concessions Mexican Eagle Oil Company obtained in 1908 and 1913 to large tracts of land allow the company disproportionate privileges, the government of Tamaulipas state, Mexico, has cancelled the franchises. The state government asserts that this action was taken after exhaustive investigation of the franchises and the circumstances under which they were obtained. Tamaulipas is to seek to collect from Mexican Eagle Oil Company a considerable sum of money in the form of taxes it claims the company owes from 1916 to 1936.

HUNGARIAN OIL
wildcat reported to yield 3 cars per day initially

Reports from Budapest, Hungary, state a wildcat drilled recently in Szentadorjan, Lispe, resulted in an initial production of three carloads of mineral oil daily. Capacity of the cars was not given, nor was the depth of completion, but the report stated gas obtained along with the oil is methane. At 80 meters the wildcat logged brown coal deposit, and at 300 meters, hard coal deposits.

An English company prospecting for oil in the region of Inke, Hungary, encountered a trace of oil and gas, but obtained only a flow of hot water. Should further exploratory work around Inke prove unsuccessful, the Hungarian press states the company will shift operations to Kirka Szentmiklos and Lendvayfalu.

OIL IN FOUR WELLS
Albanian concession of French firm is worked

Andrea Xega, chief of the bureau of mines in the ministry of national economy of Albania, states that the oil concession in Albania originally granted to Syndicat Franco-Albanais and now being operated by Societe Francaise Industrielle et Commerciale has developed oil in four wells.

The French concession is adjacent to that being intensively operated by Italian concessionaires. The French are going along more slowly in development of their concession, but, according to Xega, hope to have production on a commercial basis soon.

PERU OUTPUT UP

Production of crude oil in Peru, controlled by three companies, increased from 5,504,965 barrels during the first four months of 1936 to 5,726,061 barrels during the corresponding period of 1937, according to Julian Greenup of Lima.

International Petroleum Company, Limited, a subsidiary of Imperial Oil Company, Limited, was responsible for most of the increase, recording a recovery of 4,911,732 barrels during the first four months of this year as against 4,707,981 during the same period of last year. The production of 799,963 barrels of Compania Petrolera Lobitos during the first four months of the year represented a gain slightly better than 20,000 barrels over the amount recovered by that organization in the first four months of 1936.

The third company operating in Peru, "Zorritos" F. G. Piaggio Sociedad Limitada, dropped from 17,267 barrels to 14,366 barrels during the first four months of 1937.

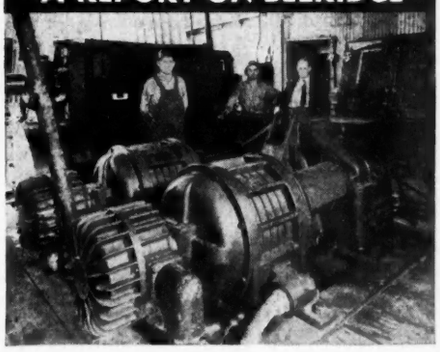
STIMULATE EXPORTS

Stimulation of oil exports is a feature of the foreign commerce bank. Mexico's federal government has organized at Mexico City with a capital of 20,000,000 pesos (about $5,600,000), subscribed by the ministry of finance and several official and private banks.

Reports of a G-E Oil-field Specialist

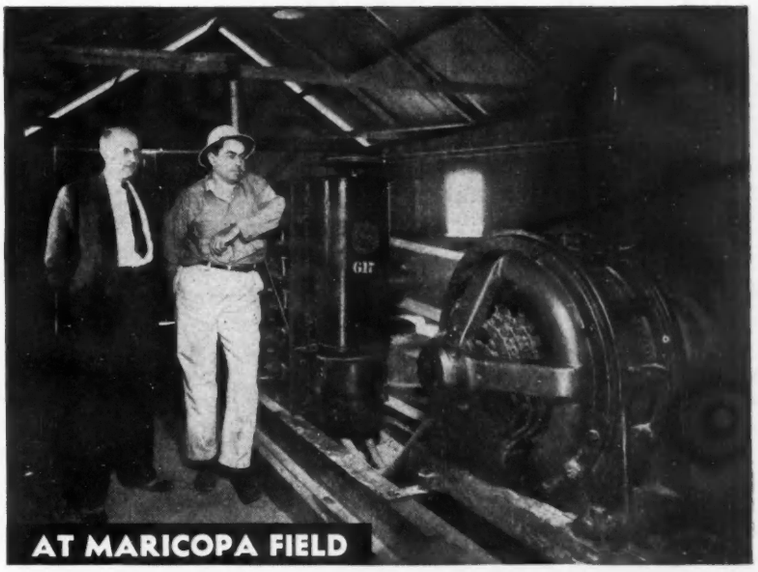
A. R. Tanner, Bakersfield

A REPORT ON BELRIDGE



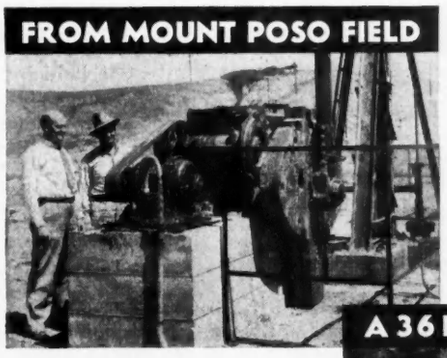
Went over to the Belridge Field to help start up a new induction-motor-driven rig that will spud in within a few days. This twin-motor drive has drilled wells 8000 feet deep, speedily and economically, and has given very dependable service.

AT MARICOPA FIELD



Here is a picture taken while I was looking over one of our oil-well motors, installed near Taft, that has been driving a pumping rig for more than 23 years. This motor has the original windings, bearings, and collector rings.

FROM MOUNT POSO FIELD

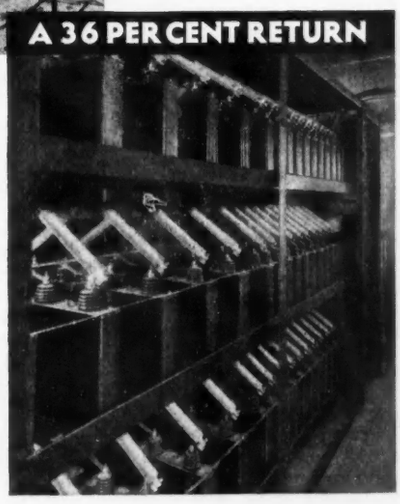


Went out to the Mount Poso Field today to help start up a new pumper for an oil company. This company recently ordered 10 more units similar to this one, each equipped with a G-E motor. G-E motors in large numbers are giving dependable pumping service in the Mount Poso Field and vicinity.

FOR QUICK SERVICING

With so many wells in this section going on "powers," a portable electrically driven hoist is a sure timesaver in servicing. The Hopper Machine Works here in Bakersfield has been doing a brisk business in hoists equipped, like this one, with G-E motors. One truck handles so many wells that the cost per well is extremely low.

A 36 PER CENT RETURN



Yesterday, I dropped in to see an important refinery customer. While there, I learned what Jim Gallagher, our oil-industry specialist from San Francisco, did for the plant. Jim recommended a capacitor to improve the power-factor, and savings in power costs are paying a 36 per cent annual return on the price of the capacitor.

TO HELP YOU

THE pictures shown and the accompanying comments were sent us recently by A. R. Tanner, our oil-field specialist in Bakersfield, California. Remember that wherever your operations are located, you can get the services of a G-E oil-industry specialist. He'll be glad to help you get the equipment best suited to your requirements. Just call our nearest office. General Electric Company, Schenectady, N. Y.

011-173

GENERAL ELECTRIC

OKLAHOMA FIELDS

Western limit of Billings production marked.

* * *

Fitts field productive area is again extended.

* * *

Haskell County wildcat has surprise show of gas.

Oklahoma City.—The Western limit at the south end of the Wilcox sand of the Billings pool, Noble County, was defined this week when the Layton sand failed to produce after perforation in Tide Water Oil Company's Shaffer 4, NE NW SW 23-22n-2w, after finding water 1 foot in the Wilcox sand at 4354 feet.

Other development in the Oklahoma City area included encouragement for extending the Moore pool, Cleveland County, farther eastward than had been anticipated, and the staking of additional locations around the south end of the Lucien pool, Logan County, where an extension was registered last week.

Dip at Billings

The dry hole at Billings was but one location west of a producing well, which had initial of 2983 barrels. There was 25 feet of dip on the Wilcox sand between the two locations. To the north of this well and on its western development, Continental Oil Company had flow of 1650 barrels in 4 hours in Conway 5, SW SE NW 21-23n-2w, where the Wilcox sand was found at 4295 feet and drilled to 4312 feet. Locations were made for Conway 6, SEc SW, and Conway 7, SWc SE 21-23n-2w. Indications are the field will be wider at this point than it has been to south on the Shaffer lease.

A production limit for the northwest edge of Wilcox production at Billings was indicated when only a small section of the formation was penetrated in Shell Petroleum Corporation and Phillips Petroleum Company's O'Neil 4, SWc SE 16-23n-2w. The well showed 9 percent salt water while flowing 268 barrels in 1 hour and 15 minutes. When pinched in, percentage of water was reduced to 3.2 percent. Tubing is being run for potential test and experiments for conquering water.

Encouragement at the Moore pool came about when Sinclair Prairie Oil Company's Franklin 4, NE SE 21-10n-2e, found the Wilcox sand structurally higher than its top in Franklin 1, field discovery well, which is one location south and two west. Either a fault or a steep dip is anticipated for the eastern edge of Moore, and this development indicates that the edge may be farther to the east than anticipated. Minus top of Wilcox sand for the discovery well was 6047 feet, while minus depth of Franklin 4 was 6043 feet. Franklin 4 found top of Wilcox at 9796 feet from surface. Coring was started and saturation proven. At 7233 feet a drill stem twist-off left a fishing job at the end of the week.

Back on Production

At the south end of Moore pool, Gulf Oil Corporation brought James 3, NE NW SW 27-10n-2w, back into production with potential of 11,578 barrels from Wilcox sand between 7280 and 7294 feet. James 3, SE NW SW 27-10n-2w, also owned by Gulf Oil Corporation, continued testing. These wells are near south edge of production, as difficulty has been found in keeping them on natural flow.

Fitts production extended third time in two weeks

Tulsa.—Fitts field received another extension last week, the third in little more than 15 days, when Sinclair Prairie Oil Company's McCarty 3 NW NE NE 22-2n-7e, pushed the producing area northeast one location. Following acid treatment with 10,000 gallons at 4054 feet in Hunton lime, the well flowed 527 barrels of oil in two hours, the first through casing and the second through tubing. During another test the well responded with a flow of 1033 barrels of oil in four hours.

Earlier in the week, Shell Petroleum Corporation's McKinley 1, SWc NE 23-2n-7e, found Hunton lime production between 3806 and 3931 feet, giving the field another northeast extension. When cleaned out and opened, the well made 799 barrels of oil in four hours, flowing through casing and tubing. It was waiting on potential.

Cromwell sand producers in the Fitts field, of which there are 30, will be tested on the basis of a 4-hour potential, by order of the corporation commission. The test will be through 2½-inch tubing. Wells making less than 100 barrels will be given their flow as an allowable.

In the Muse-Jesse area, Deep Rock Oil Corporation's Garrett 1, NEc SE 3-1n-7e, will plug back to the base of the Hunton lime after swabbing 105 barrels of oil in 28 hours at around 4600 feet.

The recent extension well at Jesse, Carter Oil Company's Nix 1, CWL SW NE 1-1n-7e, was shut in for pipe line connections. Before shutting in, it made 188 barrels of oil when opened for four hours. No potential will be taken, operators electing to take a 100-barrel daily allowable instead.

Operators at C. W. Roodhouse et al's Booth 1, SE NW SE 20-2n-6e, 3½ miles northwest of Fitts, continued attempts to make a producer of the wildcat test. Considerable trouble with mud being encountered, the well making only 32 barrels of oil in 2 hours after having been shut in for 16 hours. Mud came in with an earlier flow. Present production is from the Cromwell sand through perforations at 3094 to 3110 feet.

An eastern Oklahoma wildcat, Continental Oil Company's Ferguson 1, SW SE NE 33-8n-20e, in Haskell County, ignored by many operators since it was started last March, commanded considerable attention when it showed for 2,000,000 to 3,000,000 cubic feet of gas from the Dutcher sand between 5570 and 5597 feet on July 21. It was drilled to 5612 feet in the Wapanucka shale, topped at 5597 feet, where further testing will be done. Nine-inch casing was set at the total depth and the well was bailed down for the gas flow. Located on the Kinta anticline, the test had 4187 feet of the Atoka series, topped at 1350 feet. It is northeast of the old Quinton gas field of Pittsburg County, where no oil has been encountered. Acreage near the test is held by Stanolind Oil & Gas Company and Magnolia Petroleum Company.

The well which opened the new area west of Tecumseh in Pottawatomie County, Stanolind Oil & Gas Company and Amerada Petroleum Corporation's Billington 1, SW SE SW 32-9n-3e, continued as a good producer, making 580 barrels of oil in 10 hours early last week. July 19, the well flowed 314 barrels of oil in 15 hours and went dead. On a later 24-hour test, pinched in with a 1-inch choke, it made 577 barrels of oil.

In the East Shawnee pool of Pottawatomie County, Mid-Continent Petroleum Corporation's Logan 2, SE NE SE 31-11n-5e, topped the first Wilcox sand at 4845 feet and drilled to 4868 feet where it found water. Plugged back to 4800 feet and casing perforated between 4634 and 4673 feet, the well did not show water and had a slight scum of oil with no gas. Treated with 4000 gallons of acid and a 190-barrel oil load, the well was opened and refused to flow.

A new producer south of the Cromwell field of Seminole County was Sinclair Prairie Oil Company's Miles 1, NEc SE 27-10n-8e, which flowed 384 barrels of oil in 3½ hours following acidization of the Simpson dolomite between 4171 and 4200 feet. Gas flow was gauged at 1,250,000 cubic feet and it was shut in for potential.

Wrightsmith Petroleum Company's Taylor 1, SE SW NE 35-10n-7e, first Gilcrease sand producer located just south of the North Bethel pool of Seminole County, is to be deepened to the second Gilcrease and Cromwell sands after production fell off to about 5 barrels per hour. In the Gilcrease

from 3574 to 3585 feet, the well made an initial flow of 170 barrels of oil in six hours. The flow had been pinched back to prevent water encroachment. The area had previously produced only from the Cromwell sand.

Activity continued dull in the Centrahoma area of Coal County where Carter Oil Company et al's Thompson 1, CSL NE NW 34-2n-9e, continued pumping from 25 to 35 barrels of oil during 11- and 12-hour tests, then pumping off. Production is coming from the Viola lime.

Five wildcats started; three are dry holes, one producer

Tulsa.—Wildcat operators in Oklahoma last week started five new wells, one was completed, and three were listed as "dusters."

Cotton County broke even with one start and one dry hole. The start was Bowers & Wise's Pendergraft 1, CNW SE SW 4 -4s-12w, north of Randlett. It was building derrick. The failure was E. B. Hanes' Duper 1, NWc 21-2s-13w, northwest of Walters, which went to only 250 feet.

Garvin County had a new test starting north of Tatums pool. It was C. F. Dillingham's W. Evans 1, CNWc SW 12-1s-3w. Kiowa County's new well was Hughes & Reese' Fultz 1, CSEc SW 10-6n-18w, a machine. It is south of Hobart. A dry hole for Hughes County was Chas. Thornton's Eason 1, NEc NW 7-9n-11e, west of Wetumka pool, abandoned at 3944 feet.

The other new locations included Palmer Oil Corporation's Welty 1, SEc 2-12n-7e, northeast of Paden pool of Okfuskee County, about ready to spud. Roy S. Nash et al's Miller 1, CN/2 NE SE 29-6n-3e, southeast of West Asher pool of Pottawatomie County, was rigging up.

Pumper Makes 58 Barrels

The completion was Indian Territory Illuminating Oil Company and Foster Minerals Corporation's Hatler 1, CSW NE 32-2s-17w, south of Frederick in Tillman County. The well was completed as a pumper, making 58 barrels of oil and 136 barrels of water in 24 hours. The well has been averaging around this figure since it was plugged back from 5169 feet to 4525 feet. After plugging back a second time to 4325 feet, casing was perforated between 4215 and 4218 feet. Last operations at the well, which was started September 30, 1936, were begun May 3 of this year.

Shell Petroleum Corporation's C. R. Smith 1, CNW SE NE 30-5s-1e, southwest of Brock pool in Carter County, abandoned at 4222 feet.

Page et al spud Nebraska wildcat

Fairbury, Neb.—A new wildcat spudded in Jefferson County, Nebraska, last week. It is 16 miles southwest of Fairbury and about one mile north of Mahaska, Kansas, just across the state line. The test, Page et al's Bonham 1, SEc 31-1n-1e, is being drilled by Boyle-Grossman Drilling Company.

Appropriately enough, the venture is situated on a geological structure known as Starting Point anticline, and will be supported by a number of major companies.

OKLAHOMA
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ATOKA COUNTY—		
Dillingham, Redman 4, se sw sw 19-1n-15e	*	1320
CARTER COUNTY—		
Magnolia, Woodworth 9, sw se se 32-3s-3w	51	1143
Turman Oil Co., Phoebe Rexroot 13, se ne sw 10-4s-2w	70	2089
Shell, McClure 52, se ne sw 5-4s-3w (pb 1059)	4	1106
McClure 53, cne ne sw 5-4s-3w	41	1097
Sinclair Prairie, Loman 24, sw nw sw 9-4s-3w	15	1130
Shell, Smith 1, nw se ne 30-5s-1e	*	4222
CHOCTAW COUNTY—		
Cooper & Branstetter, Bell 1, cnw ne 29-6s-17e	*	1151
COTTON COUNTY—		
Shasta Oil Co., Slogan 16, sw nw ne 2-2s-10w	15	2144
CREEK COUNTY—		
Joe-Gail, Edwards 1-A, nw ne se 28-18n-12e	*	1760
Texas, McIntosh A. L. 17, nw nw sw 3-17n-7e (pb 2728)	115	2730
Merssner et al, Mayfield 1, se se sw 15-17n-11e	*	2457
Pure Oil, J. Richard 2, sw sw ne 4-17n-7e (2734)	22	2739
Sinclair Prairie, Litchfield 9, ne nw nw 22-17n-7e (otd 2888)	17	2904
C. O. Buckles, Buckles 3, cnw ne 22-18n-8e	*	2688
Fred B. Kroger, Moore 1, ne ne nw 29-18n-9e	*	3245
Fred B. Kroger et al, Franklin 1-A, nw nw ne 29-18n-9e	*	3245
Commercial Drlg. Co., Cordell 1-A, nw se sw 17-19n-9e	*	2408
HUGHES COUNTY—		
Winona, L. Jackson 1, se nw nw 20-7n-8e	184	2951
Sinclair Prairie, Bruner 1, nw nw nw 2-9n-9e (pb 3221)	*	3321
C. E. Beal, Eason 1, ne ne nw 6-9n-11e	*	3944
JEFFERSON COUNTY—		
Palmer & Palmer, Barrett 4, ne sw sw 19-6s-5w	5	1524
LOVE COUNTY—		
Sinclair Prairie, Stockton 1, se se sw 26-6s-2w	35	6927
MUSKOGEE COUNTY—		
W. B. Pine, Matthews 1A, se ne ne 19-15n-15e (pb 1367)	20	1914
NOBLE COUNTY—		
Stanolind-Amerada, Pfeiffer 7, sw sw sw 33-20n-2w	2919	5078
Phillips & Shell, McCaughtry 13, se ne ne 21-23n-2w	2002	4310
OKFUSKEE COUNTY—		
Ark Royalty, McIntosh 4, nw nw ne 19-10n-9e	75	1850
Tom Palmer, Wind 1, sw ne se 36-11n-9e	*	3756
OKLAHOMA COUNTY—		
Ohio Oil Co., Messer 3, sw nw sw 32-14n-3w	2903	6715
OKMULGEE COUNTY—		
Henricks, McKinney 1, ne nw se 3-14n-14e	*	785
Bingham et al, Grayson 2A, nw sw nw 34-14n-14e	5	1220
Dodge, Rentie 7A, nw nw sw 11-15n-14e	*	1616
Martin, McHenry 2, nw se nw 16-14n-11e	50	2438
OSAGE COUNTY—		
L. E. Mertz, 7A, se se se se 8-21n-9e	2	314
L. E. Mertz, 8, se se se 8-21n-9e	7	316
Pure Oil Co., Sinclair Prairie 174, nw se nw 5-23n-8e	77	760
Lewis Prod. Co., 4, se se sw 28-24n-7e	194	2659
I. T. I. O., 446, nw sw sw 21-27n-11e	¶4	2146
PONTOTOC COUNTY—		
Carter, Nix 1, cw½ sw ne 1-1n-7e	512	4020
Loual et al, Craddock 1A, se ne ne 25-2n-6e (otd 1429)	50	1880
Magnolia, Norris 8, ne sw ne 25-2n-6e	¶13	1808
Moore, Smith "B" 9, sw se se 25-2n-6e	298	3635
Stanolind, Norris "E" 7, sw sw se 25-2n-6e	2076	3723
Moore, Akers 15, ne sw ne 36-2n-6e	2745	3860
Magnolia, Lewis 2, se sw sw 19-2n-7e	812	4345
Magnolia, F. Young 1, se ne nw 22-2n-7e (pb 3880)	162	3910
Navarro, Horn 4, se ne ne 22-2n-7e	3470	3914
Magnolia, Metro Life 32, sw nw ne 27-2n-7e	118	2575
Loual, Hardin 7A, ne nw nw 30-2n-7e	1020	3945
Campbell, Owensby, se sw sw 21-3n-4e	*	287
Stanolind, Allen 3, ne se ne 32-5n-5e (pb 2080)	5	2590
POTTAWATOMIE COUNTY—		
Rischer & Clark, Brown 1, ne se ne 15-7n-4e (pb 3992) (otd 3650)	50	3996
SEMINOLE COUNTY—		
Wood, Harjo 1, se sw nw 12-5n-7e	350	4298
Kilbourne, Factor 1, nw sw se 25-5n-7e	*	1105
J. F. Smith, Huddleston 3, se ne sw 32-7n-6e	320	2974
Empire, Fee 1, ne nw sw 20-7n-8e	162	2943
Merva, Johnson 3-A, se nw ne 10-10n-8e	212	4166
Amerada, Klabzuba 3, se sw se 35-11n-5e	583	4616
STEPHENS COUNTY—		
Raizen Bros., Myers 2, se nw nw 24-1s-5w (pb 756)	2½	767
Helmerich & Payne, Graham 1, sw sw ne 12-1n-5w (pb 3875)	307	5014
TULSA COUNTY—		
Johnson Oil & R., Grimes 5, sw ne sw 31-19n-10e	118	2292
Sand Springs Home, Watson 1, cw½ se nw 31-18n-13e	*	3003
WAGONER COUNTY—		
Oklahoma Oil Co., Littlehead 1A, se nw nw 13-16n-15e	*	1132
A-Z Oil Co., Fee 2, se nw nw 16-16n-15e	2	1268

*Failures; †Junked; ¶Million cu. ft. gas.

KANSAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BARBER COUNTY—		
Pryor & Lockhart, Gant 1, cse 7-31s-13w	1351	4438
BARTON COUNTY—		
Empire, Bitters 3rd, nw nw nw 5-16s-13w	2083	3307
Shell, Schneider 1, cse 12-16s-14w	*	3352
National Ref., McLean 6, ne se se 25-17s-11w	210	3320
Republic & Continental, Moeder 1, nw nw sw 25-17s-13w	*	3370
Herndon Drlg. Co., Robenseifer 1, cnw¼ 7-18s-15w	¶28½	3599
Stanolind, F. Panning 1, ne ne nw 11-20s-11w	2330	3274
Gulf, M. Meyer 1, sw sw se 13-20s-11w (pb 3333)	15	3335
CHAUTAUQUA COUNTY—		
C. L. Carlock et al, Black 1, sw sw nw 29-32s-13e	*	2000
Hough & Wentz, Wills 1, se se nw 10-33s-9e	*	2318
Sinclair Prairie, Kirschner 1, se se se sw 32-33s-11e (pb 1755)	¶3	2119
Moore 25, cne sw 3-34s-11e	¶¾	1707
J. B. Reagan, Severns 1, nw ne nw 16-34s-12e	*	600
COWLEY COUNTY—		
Lloyd, Frost & Study, Wilson 3, ne se sw 33-31s-3e	2998	3247
Gulf, Rice Est. 2, se nw sw 21-32s-5e	*	3132
ELK COUNTY—		
Tyrrell, Sellens 1, se se se 11-31s-9e (otd 1522)	170	2322
Hicks, Lewis 4, cs½ s½ se 35-31s-10e	50	2307
Diller O&G, Key 6, nw sw nw 25-31s-10e (pb 1646)	40	1664
ELLIS COUNTY—		
F. A. Bemis "A" 6, nw nw ne 28-11s-17w	2799	3393
Lebow et al, Richmond 1, sw sw se 15-11s-17w	2586	3444
Margay, Bemis "C" 7 se ne sw 22-11s-17w	2644	3474
Bemis "C" 8, ne ne sw 22-11s-17w	1528	3453
Johansen 1, sw sw se 22-11s-17w	2404	3439
Deep Rock, Baumer 7, nw nw ne 27-11s-17w	2323	3542
Baumer 9, se nw nw 27-11s-17w	2730	3464
Carter, Staab 4, sw se nw 11-12s-18w	1146	3656
ELLSWORTH COUNTY—		
Youches, Patzner 1, sw se nw 30-17s-10w	1515	3291
Gulf, Grizzell 8, sw se sw 31-17s-10w	*	3491
GRANT COUNTY—		
Columbian Fuel, Maxwell 1, csw 4-29s-36w	¶6½	2724

Company, Well and Location	Init. Prod. Bbls.	Depth
GREENWOOD COUNTY—		
Houston-Okla. Oil Co., Berry 6, sw ne sw 28-23s-13e	125	1761
Dyke et al, Davis 5, ne se se 6-24s-12e	*	1850
HARVEY COUNTY—		
Olsen Drlg. et al, Nelson 5, se sw nw 30-23s-3w	866	3365
McPHERSON COUNTY—		
Smith & Carver, Larson 1, nw nw sw 35-18s-5w	*	3503
Ohio Oil Co., Deekert 14, ne ne se 20-21s-1w	238	3340
Continental, Blair 6, nw nw sw 21-21s-1w (pb 3312)	73	3317
RENO COUNTY—		
Maxwell Oil et al, Hildebrecht 1, sw sw ne 36-22s-4w (pb 3362)	¶1¼	3367
A. M. Ballard et al, Skelly 1, nw se ne 16-24s-4w	201	3365
Phillips, Astel Island 3, nw ne ne 19-24s-4w	53	3358
Empire, Mauch 5, se nw nw 15-26s-9w	2186	4143
RICE COUNTY—		
Texas, Schartz 4, swc se 33-19s-10w	376	3334
Shell et al, Grizzell 1, c e½ c½ sw 5-19s-9w	*	3244
Tatlock, Drew 7, se nw sw 5-20s-10w	222	3317
Berschiedt 6-A, nw sw sw 6-20s-10w	1545	3290
Douglass, Theede 8, ne nw sw 9-21s-7w	1054	3396
Gordon & Haines, Gossman 4, se nw nw 9-21s-7w	15	3372
Sunflower Oil, Strange 3, se sw nw 16-21s-7w	*	3398
Westgate et al, Johnson 2, nw se ne 17-21s-7w	15	3398
Louck, Heter 2, ne se se 1-21s-8w	582	3355
ROOKS COUNTY—		
Joel et al, Ives 1, sw ne 11-7s-18w	*	3565
RUSH COUNTY—		
Brouke et al, Lebsack 1, sec ne 13-16s-16w	*	3512
Carter, Woodward 2, sw sw se 23-18s-16w	131	3544
RUSSELL COUNTY—		
Texas, Brandenburg 2, ne nw nw 20-14s-14w	665	3050
British American, Boxberger 3, sw ne ne 33-13s-14w	1320	3278
Hartman & Blair, Boxberger 2, se ne nw 33-13s-14w	400	3355
Skelly, Boxberger 4, se nw ne 33-13s-14w	930	3292
Phil-Kan, Mickel 1, nw ne sw 36-14s-14w	1073	2946
Central Pet., Foster 12-B, se ne ne 3-14s-15w	2352	3306
Carter, Detrich 5, c n½s½ sw 8-15s-13w	1656	3176
Skelly, Rein 1, sw nw sw 8-15s-13w	2381	3228
W. I. Southern, Sellens 4, swc nw 30-15s-13w	3203	3296
Sellens 5-B, ne se nw	2412	3285
Gulf, Hoffman 6, nwc sw 31-15s-13w	1716	3277
Phillips, Hoffman 11, nw se se 31-15s-13w	1656	3342
Empire, Boomhower 1, sw ne ne 25-15s-14w	2150	3319
Darby, Michaelis 2, se ne se 36-15s-14w	1465	3322
SCOTT COUNTY—		
Olson et al, Nolan 1, nwc ne 13-19s-33w	*	5035
SEDGWICK COUNTY—		
Ryan et al, Williams 1, nwc se 17-25s-2w	*	4065
STAFFORD COUNTY—		
Stanolind et al, Brock 3, ne nw sw nw 6-23s-11w	*	3725
Rosespring et al, Cary 1, nwc 11-24s-13w	*	4034
STEVENS COUNTY—		
Panhandle Eastern Youngren 1, c se 11-32s-39w	¶7	2800
Southwestern, Silease 1, c e½ 35-33s-39w	¶13	2756
Stelbar, Barlow 5-B, se sw se 33-31s-1w	1069	3691
SUMNER COUNTY—		
Faulkner et al, Nevitt 1, ne nw ne 36-32s-2e	35	2830
Amerada, Nelson 2, sec nw 5-32s-1w	524	3689
WOODSON COUNTY—		
Henderson Oil, Vortrey 5, se se ne 23-23s-14e	*	1671
McGinnis et al, Weide 5, nw ne se 31-23s-15e	*	1576
Woodson P. L. Co., Rhea 15, nw sw se ne 13-24s-13e	*	1700
Kelly, Mason 1, sec ne 14-25s-13e	*	1341
Sheedy College 2, sw ne se 28-25s-14e	50	1495
Urschel et al, Huff 1, nwc sw 29-25s-14e	*	1442

*Failures; †Junked; ¶Million cu. ft. gas.

KANSAS FIELDS

Silica and Scharts pools may be joined together.

* * *

Farthest west pool may have fourth producer.

Wichita.—A wildcat completion to indicate another western Kansas oil pool for Barton County, continued expansion that indicates possible linking of the Silica and Schartz pools of Rice County, an extension for the Doran pool, Rice County, and a freak oil well from a gas well drilled in 1931 in the Otis pool, were highlights of the week in Kansas.

The Kraft pool, Barton County, drew its second completion, which will be acidized a second time before being completed.

Another possible link well between the Silica and Schartz pools of Rice County was brought in last week at Carter Oil Company's Risse 2, NW SW SW 33-19s-10w, at the west edge of the Schartz pool. The well went to 3311 feet in Siliceous lime and produced 1122 barrels of oil.

Southwest extension of the Doran pool was assured when Atlantic Refining Company's Doran 2, CE½ E½ SE 13-19s-10w, made 166 barrels of oil in 10 hours following acidization with 1000 gallons. After finding production from 3289 to 3299 feet, the well was deepened to 3301 feet, acidized with 2000 gallons and swabbed 20 barrels of oil in 1½ hours. Fill-up was at the rate of 14 barrels per hour. The well was acidized with an additional 4000 gallons and shut in to await reaction.

Freak Begins Flowing

In September, 1931, Morgan & Flynn's Korial 1-A, C NW 23-18s-16w, in the then Otis gas pool, was completed for 18,000,000 cubic feet of gas and was known to have sprayed some oil at the time. It was bottomed at 3516 feet in Reagan sand. Last week the well began bringing itself in, throwing some water and sediment out of the hole. It was deepened to 3541 feet, and surprised owners by making 1500 barrels of oil and 25,000,000 cubic feet of sweet gas daily. It is the second freak well for Kansas in two weeks. Two weeks ago, a salt water disposal well drilled by Gulf Oil Corporation at the south end of the Chase pool in Rice County, found commercial production in the Siliceous lime at 3308 feet.

Barton County reported a new oil pool last week, 3 miles west of production in the Silica pool. Stanolind Oil & Gas Company's Schartz 1, NWc 33-19s-11w, swabbed 800 feet off bottom and made 35 barrels of oil an hour. It was bottomed in the Siliceous lime at 3350 feet and production followed acidization. When drilled in and shot earlier, the well made only 3 barrels of oil an hour.

Carter Oil Company's Karlin 1, in Section 1-12s-18w, in the Marshall-Walters area of Ellis County, drilled to 3691 feet in the Siliceous lime and had 2000 feet of oil standing in the hole.

First producer for Magnolia Petroleum Company in the Bemis pool of Ellis County was completed last week at Johansen 1, SW NW SE 22-11s-17w. It pumped 1570 barrels of oil natural from the Siliceous lime at 3436 feet. Operations were under way for Johansen 2, SWc NE 22-11s-17w.

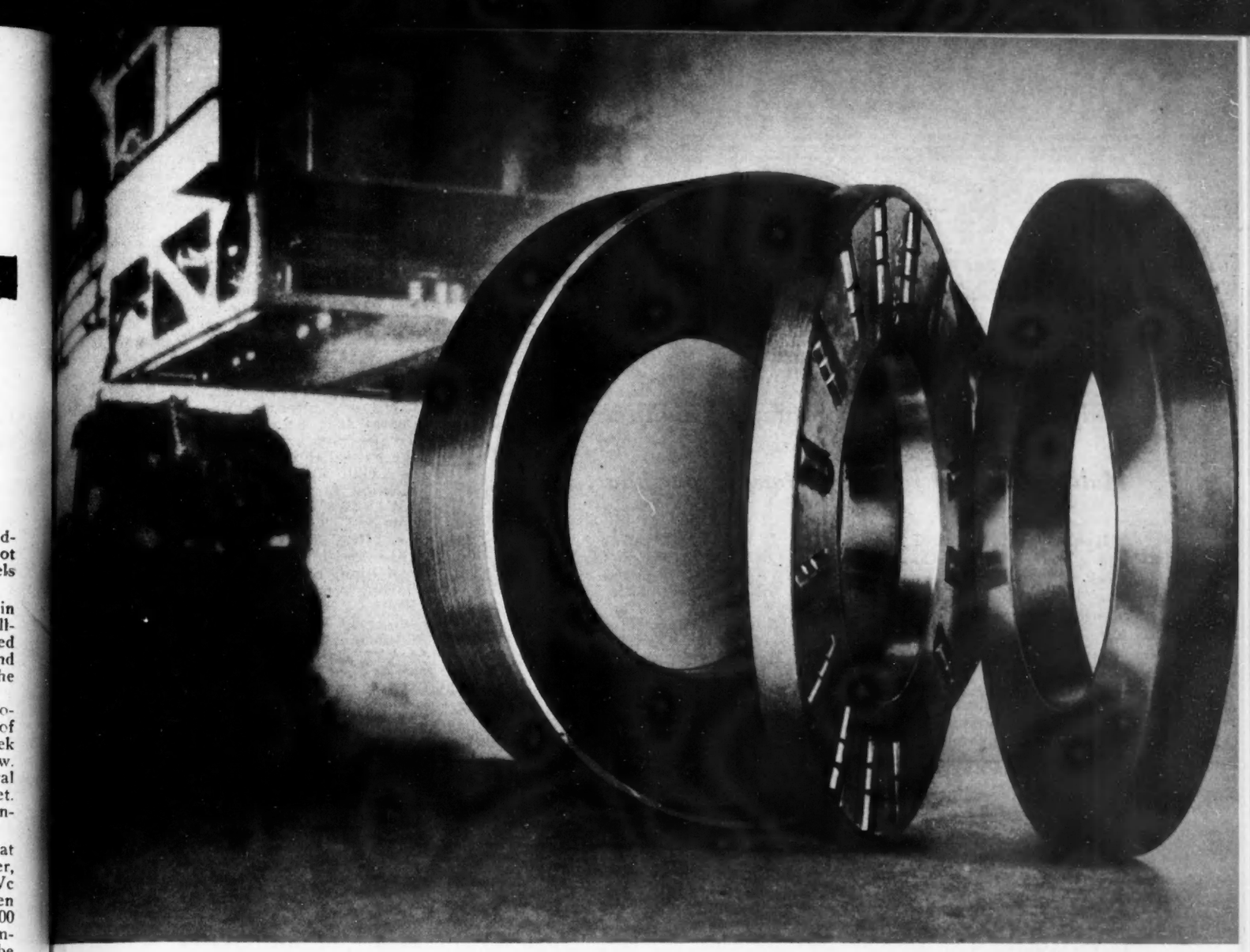
Production tests were due shortly at McPherson County's latest producer, C. R. Craft et al's Barnholt 1, SWc SE 30-20s-5w, south of Windom. When last reported, the well contained 3100 feet of oil. Cleaning out has been completed and a natural flow test will be made, as the well has not been acidized.

Southwest of Medicine Lodge in Barber County, Barbara Oil Company's Holmes 1-A, C E½ SE 15-33s-13w, discovery well and only oil producer in the pool, was deepened 1 foot and was making nearly 25 barrels of oil per hour on preliminary tests.

Possibility of another producer in Kansas' farthest west oil pool, the Shallow Water pool of Scott County, looked good last week after a saturated core was recovered at Atlantic Refining Company's Pile 1, C NE 14-20s-33w. The core was taken from the Mississippi lime at around 4653 feet, showing good porosity. Commercial production at the well will give the county its fourth producer. Atlantic Refining Company opened the pool in 1935 with Vaniman 1, C SE NE 15-20s-33w, which had an initial production of 572 barrels of oil.

A small producer was reported from northwest of Sedan in Chautauqua County at Olson Drilling Company et al's Holyrod 1, SE NE SW 24-33s-10e, the well making between 40 and 60 barrels of oil daily from the Mississippi lime at 2009 feet.

Second producer in the Kraft pool of Barton County came in last week. It was Carter Oil Company's Krautwurst 1, NE SE NW 10-17s-11w, which was last reported as making 676 barrels of oil in 24 hours from the Siliceous lime at 3320½ feet. July 21 the well produced 591 barrels in the same period. It was to be re-acidized.



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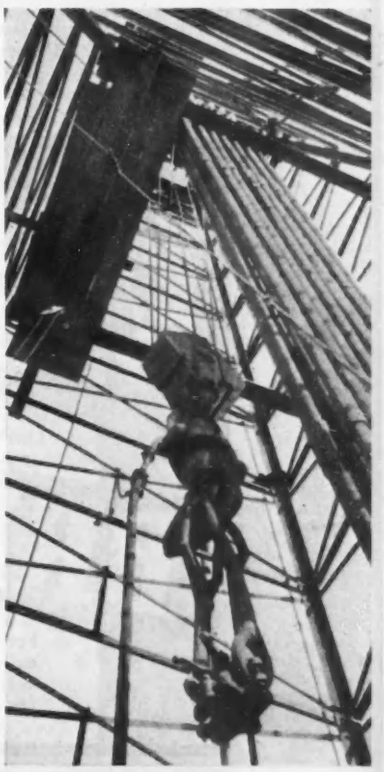

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CYLINDRICAL ROLLER

ROLLWAY BEARINGS

NEW MEXICO

Lea County field work continues at high rate.

* * *

Mattix producer rated 108 barrels per hour.

Hobbs.—Completion of 19 producers and a failure in Lea County the past week reflects the gain in field work that has been in evidence for several months. The county recorded 11 new tests, with Eunice and Monument each credited with four. New developments included several large oil wells in the sandy-lime belt in the east portion of the county, and the addition of another flowing producer for the north end of the Monument field.

Continental Oil Company et al's I. C. Farney 2-A-5, C NE SE 5-23s-36e, northeast outpost for the Lynn lime field, encountered the water table at a comparatively high structural position. Pay at 3690-3796 feet showed water on gas lift test. The hole was plugged back to 3785 feet, or 297 feet sub-sea, and after using 1000 gallons of acid, flowed 287 barrels of fluid, 30 percent water, in 24 hours through ¾-inch choke. Continental Oil Company et al's Stevens 1-A-34, C SW NW 34-23s-36e, north outpost for the Cooper field, was rated at 2,800,000 feet of dry gas daily when formation tester was used at 3527-70 feet, with an elevation of 3417 feet. No oil shows were logged in deepening to 3666 feet.

Repollo Oil Company's F. Stuart 3-C, SE NE SW 10-25s-37e, offsetting production in the Langlie trashy-sand area, logged first oil show at 3316 feet, with an elevation of 3113 feet, and found a soft section at 3334 feet that resulted in a natural flow of 254 barrels the first hour and 112 barrels the next hour. The well was tubed, then gauged 721 barrels of oil in 12 hours on ¾-inch choke. Jal Natural Gas Company's Justis 2, C SE NE 20-25s-37e, west outpost, was flowing 80 barrels daily by heads while drilling at 2960 feet, with an elevation of 3056 feet. It is one of the shallowest producers in the area. Woodley Petroleum Company has entered this area with its first test, having made location for Shahan 1, C SW SE 28-25s-37e.

Schermerhorn Oil Corporation's E. Woolworth 1, C NW NE 28-24s-37e, south offset to production in the Mattix area and on a lease previously held by Phillips Petroleum Company and Pure Oil Company, flowed 108 barrels per hour natural on ¾-inch choke from sandy-lime at 3473-77 feet. It has an elevation of 3224 feet. The company has started operations on Woolworth 2, C SE NE 28-24s-37e.

Production from the lime section is the objective of Repollo Oil Company's A. L. Christmas 2, NE SE NE 28-22s-37e, located on south end of the Penrose sandy-lime area, after showing for a small producer in the regular horizon. Drilling was underway at 3950 feet.

The Texas Company's Keohane 1, C NE NE 18-19s-37e, offset to the northernmost producer at Monument, averaged 60 barrels per hour flow for five hours after testing through tubing at 4020 feet, or 318 feet sub-sea. Tubing pressure was 600 pounds, and the gas-oil ratio was 2200 feet per barrel. Gulf Oil Corporation has made location for State-Kutter 1-D, C SW SW 8-19s-37e, ¼ mile north of production. This company's State-Graham 2-G, C NW SE 17-19s-37e, northeast edge location, encountered tight lime condition, and has failed to make a flowing producer after re-acidizing with 5000 gallons at 3990 feet, or 324 feet sub-sea. However, Continental Oil Company has made location for State 5-A-17, C SW NE 17-19s-37e, a north offset, and also for Sanderson 2-B-14, NE NW NE 14-20s-36e. This company's State 2-A-26, C NW SW 26-19s-36e, near north line of west edge of Monument area, responded to treatment of lime at 3870-4020 feet with 2000 gallons of acid by flowing 49 barrels oil per hour. The Texas Company's W. Weir 2, C SE SW 23-19s-36e, several locations removed from production on the northwest flank of the structure, has started operations.

NEW MEXICO
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY (Eunice)—		
Continental et al, M. Lockhart 5-A-30 ne ne sw 30-21s-36e	500	3928
Bert Fields et al, State-Turner 2, sw ne nw 32-20s-37e	720	3840
Gulf, State-Bell 4-F, c ne nw 36-20s-36e	900	3855
Republic Prod. Co.-Empire, State 1, c se se 12-21s-35e	45	3900
Shell, State 4-M, lot 16, 1-21s-35e	870	3865
Stanolind, McQuatters 2, c nw ne 11-21s-36e	1200	3840
LEA COUNTY (Hardy)—		
Continental et al, A. M. Lockhart 1-A-17, c nw sw 17-21s-37e	150	3796
Gulf, E. A. King 3, c se nw 28-21s-37e	50	3788
W. T. McCormack 2, nw nw ne 32-21s-37e	120	3780
LEA COUNTY (Hobbs)—		
Shell, Sanger Inv. Co., 5, near c sw 27-18s-38e	2425	4239
LEA COUNTY (Langlie)—		
Repollo Oil Co., F. Stuart 3-C, se ne sw 10-25s-37e	2500	3334
LEA COUNTY (Monument)—		
Continental et al, Britt 6-B-18, c se se 18-20s-37e	500	3875
Sanderson 1-B-14, c ne ne 14-20s-36e	1000	3896
Continental, State 2-A-26, c nw sw 26-19s-36e	1200	4020
Gulf, E. Shipp 1, c se nw 21-19s-37e	¶4.1	3975
LEA COUNTY (Penrose)—		
Gulf, State-R. E. Cole 1, c se se 16-22s-37e	800	3701
Shell, Rinewalt 1, se se nw 4-22s-37e	720	3758
LEA COUNTY (Skelly)—		
Gulf, F. B. Davis 1, c ne ne 8-23s-37e	50	3712
LEA COUNTY (Wildcat)—		
Jim W. Brown & Reynolds, Parcell-Conoco 1, c nw se 8-21s-38e	10	4401
The Texas Co. (was C&G Oil Co.), E. Weir 1, c ne ne 14-20s-37e	*	4210

*Failures; †Junked; ¶Million cu. ft. gas.

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UNITED STATES STEEL

NORTH AND WEST TEXAS

Three North Permian Basin wildcats eliminated.

* * *

Grayson County show indicates pumping producer.

* * *

Crane County Ordovician test finds things higher.

Midland.—Three of the wildcats involved in the aggressive search for new oil areas in the north portion of the Permian basin were eliminated by the appearance of sulphur water at the projected oil horizon, while preliminary test given a wildcat in northwestern Gaines County fulfills earlier forecasts of opening a new pool.

Fourth oil discovery for Gaines County was indicated last mid-week when Continental Oil Company's E. H. Jones 1, C SE NE PSL Section 22, Block A-7, 9½ miles west by south of the Wasson pool, swabbed 8 barrels of oil per hour after using 1000 gallons of acid solution at 4959 feet, or 1309 feet sub sea. The lime section, topped at 4020 feet, is void of any appreciable volume of gas, and the hole was swabbed dry before using acid. The hole will be deepened, according to H. B. Simcox, manager West Texas operations. The company holds leases on about 8000 acres in the area. Argo Oil Corporation's E. H. Jones 1, located on the same geological feature and 4¼ miles north by east, was drilling at 4350 feet, and occupies a higher structural position.

Recovery of oil-stained lime in core at 4894-4902 feet by Amon G. Carter and Continental Oil Company's Langdon 1, SW PSL Section 44, Block AX, about 3 miles northeast of the discovery well of the Wasson area, enhances its outlook for production. It is 150 feet lower on structure than the producer, having topped lime at 3980 feet, or 433 feet below sea level. Seven-inch pipe has been cemented on bottom to deepen and test. Amerada Petroleum Corporation's Matthews 1, 1¼ miles southwest of the Wasson discovery, was drilling at 4700 feet. Top of brown lime was called at 3930 feet, or 373 feet sub-sea, giving it a 62-foot higher structural position.

Ernest L. Wilson and Illinois Oil Company's Yellow House 1, southeastern Bailey County and the northernmost wildcat in the basin, logged sulphur water at intervals between 4497 and 4525 feet. Owners plan to plug back and perforate casing to acidize oil-stained lime, with good porosity at 4400-55 feet.

Two Yoakum Tests Get Water

Two Yoakum County prospects showed water after passing up showings. Magnolia Petroleum Company's Taylor 1, NE NE NE Section 201, Block D, encountered first water sand at 5235 feet, with an elevation of 3607 feet, and water increased in drilling to 5275 feet. Bahan, Rhodes & Fitzpatrick's Shook 1, C NE Section 420, Block D, reached the water table at 5378-80 feet, with an elevation of 3761 feet. Little free oil appeared at 5309-13 feet and 5370-76 feet, but insufficient to make a well. The Texas Company's Walker 1, C SE SE Section 794, Block D, about 8½ miles northwest of the Wasson producer, logged top of Yates at 2990 feet, and first lime at 4480 feet, with an elevation of 3656 feet, and was fishing drill pipe at 4613 feet. Correlation of these markers with the Wasson discovery reveals an exceptionally high structural position for Walker 1. Bohago Oil Corporation and Bond Oil Corporation's West-Ohio 1, C SE NW Section 606, Block D, is also checking high with top of Yates at 3041 feet, or 619 feet above sea level, and was drilling at 4650 feet.

Amerada Petroleum Corporation's Littmann 1, northwestern Andrews County prospect 2 miles east of a 10-barrel wildcat well in New Mexico, deepened to 4400 feet with minor increase in pay. It will be acidized. When acidized twice at 4365 feet the well swabbed 48 barrels of 31.7 gravity oil during the last 18 hours before deepening. The lime section is void of gas. Shell Petroleum Corporation is also caught with a shot term lease in the area, and has made location for W. Terry 1, C SW SE PSL Section 5.

Foster field, Ector County, was widened 1⅛ miles to southeast through the completion of York & Harper, Inc. and Sloan-Zook Company's Bagley 1, SW SW SW of T. P. Section 17, Block 42, T-2-S, for an initial of 530 barrels on swab after nitro shot in lime at 4320 feet. Sun Oil Company's John Kelly 1 has been authorized for a south offset. Eastern Ector County has lately received considerable lease play from majors on the strength of geophysical surveys. Relatively high structural position of Sinclair Prairie Oil Company's J. L. Johnson 1-A, NE NE NW of T. P. Ry. Section 42, Block 42, T-1-S, although abandoned at 6098 feet as the deepest test in the county, aroused first interest in this section of the county. Phillips Petroleum Company and Pure Oil Company's Gist 1, C SW NW T&P Ry. Section 2, Block 42, T-2-S, drilling at 2500 feet, will have direct bearing on the play.

Goldsmith field, Ector County, is currently registering more completions each week than any single area in the district, having added 11 producers the past week. Phillips Petroleum Company and Pure Oil Company's Clyde Phillips 11, near center of west line NW of T&P Ry. Section 24, Block 44, T-1-S, set a new record for initial rating for the field in flowing at rate of 8737 barrels daily after re-acidizing lime at 4092-4167 feet.

Grayson County wildcat showing for producing well

Wichita Falls.—Denver Producing & Refining Company's Cannon 1, Grayson County wildcat, about 2 miles northwest of Whitesboro, was showing for an oil producer late last week from sand at 2389-95 feet after showing mostly water when first bailed down the well flowed small heads after agitation with bailer, and is expected to make a commercial pumper. The water is believed to have accumulated in the sand from rotary returns.

Sand Hills test higher on Ordovician than others

San Angelo, Texas.—Gulf Oil Corporation's W. N. Waddell et al 5, C NW SE PSL Section 4, Block B-27, fourth Ordovician lime test for the Sand Hills field, Crane County, attained a higher structural position than the previous completions in logging top of the lower lime series at 5806 feet, or 3261 feet sub sea. Operations were halted at 5836 feet to cement 7-inch pipe. This test is ¼ mile south of the company's Waddell 4, which flowed 1885 barrels from Ellenberger limestone at 6004-14 feet, with an elevation of 2559 feet. The latter is the largest Ordovician lime producer in West Texas, and is 12 feet lower on structure than the new prospect.

A low structural position was registered by Superior Oil Company (California) et al's Massie unit 1, C SE NE of GC&SF Section 55, Block UV, Crockett County, in topping the Simpson at 7131 feet, or 4594 feet. It was drilling at 7230 feet, with a contracted depth of 7500 feet. On the above marker, this wildcat is about 248 feet lower than Stanolind Oil & Gas Company et al's Todd 1, located 1½ miles northwest, and the latter was abandoned at 8041 feet.

Loving County prospect has not been depleted

Fort Worth.—The statement that the Lewis & Slagel prospect in northwestern Loving County, West Texas, was depleted appeared in THE OIL WEEKLY of July 19 on Page 122. This statement has been misleading and was inconsistent with facts set forth in the same paragraph.

As explained in the article appearing July 19, only one well has been drilled on the structure. It was abandoned because of water intrusion, but its production yield was sufficient to warrant belief that commercial production might be procured with a properly completed well.

In view of these facts it can not be stated that the area is depleted.

Barnett Petroleum Company is the principal leaseholder in the region.

WEST TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CRANE COUNTY (McCamey)—		
L. E. Edwards et al, H. T. Sapp-Taylor 1	24	2120
CRANE COUNTY (Sand Hills)—		
Gulf-Cranfill Bros., Tubb 7	139	4420
ECTOR COUNTY (Foster)—		
Weekley Oil Corp., E. F. Foster 2-A	618	4218
ECTOR COUNTY (Goldsmith)—		
Atlantic Ref. Co., H. E. Cummins 3-C	200	4255
T. P. Land Trust 3-A	628	4278
Bond Oil Corp.-L. C. Harrison, T. P. Land Trust 8	344	4275
Continental, T. P. Land Trust 1-B, sec 35	458	4271
Gulf, Goldsmith 24	224	4220
Goldsmith 28	324	4200
Humble, C. Scharbauer 1-B	220	4260
Landreth Oil Corp., C. Scharbauer 5-B	718	4220
C. Scharbauer 8-C	1202	4235
C. Scharbauer 3-E	651	4205
C. Scharbauer 3-H	1590	4211
ECTOR COUNTY (North Cowden)—		
Stanolind, J. M. Cowden 44-A	175	4263
Tide Water Associated-Phillips Pet. Co., Smith 1	902	4325
FISHER COUNTY (Robinson)—		
Tide Water Associated Oil Co., E. L. Smith 1	2600	3510
GARZA COUNTY—		
S. Caprito-Gartex Oil Co., U. U. Post 1	*	3608
GLASSCOCK COUNTY (Carter)—		
Fleetborn Oil Corp. et al, J. H. Taylor 1	45	2668
GLASSCOCK COUNTY (World-McDowell)—		
World Oil Co., McDowell 5-C	†	860
GLASSCOCK COUNTY—		
Continental-Group 1 Oil Corp., Settles 36-S	424	1263
HOWARD COUNTY—		
Ajax Drlg. Corp., T. P. Land Trust 1-A	*	2680
Conoco & Group 1 Oil Corp., S. T. Eason 8	1454	2428
T. P. Land Trust 7	906	2480
C. B. Rains Est. et al, Otis Chalk 1	*	3247
Sinclair Prairie, P. Jones 3	311	2890
LOVING COUNTY—		
D. J. Finley & A. W. Cherry, Johnson 1	*	3963
PECOS COUNTY (Masterson)—		
Aero Gas Ref. Co., D. B. Gregg 5	60	1466
PECOS COUNTY (Pecos Valley)—		
D. J. Finley et al, Iowa Trust-Sinco 2	3	1644
PECOS COUNTY (Toborg)—		
Paul Childress, Tr., Smith-Sinco 17	*	398
PECOS COUNTY (Wildcat)—		
Pine Rock Oil Co., University-Sun 1	*	1517
C. E. Wheeler et al, W. D. Riser 1	*	392
SCURRY COUNTY—		
J. G. Bristow-R. H. Cantrill, S. G. Tomlinson 1	*	3166
UPTON COUNTY (McCamey)—		
Cardinal Oil Co., Starnes-Fowler 2	738	2290
Continental, A. A. Reese 11	1346	2629
J. K Hughes Oil Co., D. Elder-Hughes 1	482	2384
Glen J. Smith et al, Burleson 2	864	2153
Sun Oil, M. L. Baker 4	262	2318
Snowden & McSweeney Co., Hughes 6	250	2309
WARD COUNTY—		
Harry Black-Hedrick, T. M. White 4	38	2230
FHE Oil Co., Green 7	808	2460
L. Richter 8-C	4028	2962
Gen'l Crude Oil Co., J. F. Hathaway 2	2000	2665
Gulf, E. W. Estes 35	1325	2620
E. W. Estes 39	1634	2660
F. G. Leidecker et al, S. S. Owens-Shell 5	225	2630
Reno Oil Co., J. B. Bennett-Pure 9	179	2550
Standard Oil Co. (Tex.), A. B. Gordon 40	84	2525
Tex-Mex Pet. Corp., S. G. Smith-Pure 9	167	2480
T. P. Coal & Oil, H. James 19	964	2520
L. D. Thorne, Tr., E. Beatty 5	93	2450
Tide Water Associated, Johnson 32	950	2660
Johnson 33	864	2666
Johnson 35	1253	2657
WINKLER COUNTY (Emperor)—		
Bert Fields et al, E. W. Cowden-Pure 2-B	1802	3000
WINKLER COUNTY (Gulf-O'Brien)—		
Gulf, G. W. O'Brien 84	144	3185
WINKLER COUNTY (Henderson)—		
Emperor Oil Co., J. W. Hess 4	5075	3070
WINKLER COUNTY (Kermit)—		
W. D. Ambrose et al, W. A. McCutcheon 2	559	3285
Gulf, O. Clapp 10	232	3110
Daugherty 48	1256	3140
Humble, N. R. Colby 6-B	358	3025
N. R. Colby 15-C	355	3085
Illinois Oil Co., Abilene State Bank-Conoco 8-A	1858	3100
Abilene State Bank-Conoco 10-A	1389	3097
Sinclair Prairie, H. E. Cummins 5-C	108	3030
Stanolind-Westbrook-Thompson Hold Corp., Hutchings 6	¶1.6	3030
Sun Oil, Daugherty 5	502	2896
YOAKUM COUNTY (Bennett)—		
TP Coal & Oil, Ruth Bennett 2	642	5271

*Failures; †Junked; ¶Million cu. ft. gas.

TEXAS PANHANDLE
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CARSON COUNTY—		
Empire, Deahl 7	¶5.9	2907
Magnolia Pet. Co. 14-D	200	3095
GRAY COUNTY—		
F. W. Dye et al, A. Holmes 1	471	3285
Kewanee O&G Co., R. Arnold-Morgan 11	751	3288
King Oil Co., J. C. Vallmert 8-N	497	3285
Stanolind, T. B. Cobb 11-C	216	3326
HUTCHINSON COUNTY—		
Amtex Pet. Corp., Tom Lewis 32	569	3056
Dolomite Prod. Co., J. J. Perkins 2	704	3067
Drilling & Exploration Co., Inc., R. L. Pond-Means 2	590	3100
Stanolind, W. B. Haile 4-B	237	3071
J. L. Moore 9	418	3100
H. B. Terry 5	667	2935
Timms-Robinson Oil Corp., W. B. Haile 1	117	2988
MOORE COUNTY—		
Panhandle Eastern P. L. Co., J. T. Sneed 1, sec 44	¶43.6	3162
WHEELER COUNTY—		
Smith Bros. Ref. Co., D. E. Johnson 9	1017	2532

*Failures; †Junked; ¶Million cu. ft. gas.

NORTH TEXAS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
L. T. Burns et al, Longley 1-B	*	1130
J. H. Turbeville 1-M	*	1115
Duncan & Marchman, N. I. Andrews 5	*	1052
N. D. Goldsmith et al, A. D. Weaver 1, sec 2406	*	1302
S. H. Huggins et al, J. J. Perkins 4, sec 13	7	1000
Magee & Stipe, W. M. Justice 6, blk 6	3	1081
Tom Minnich et al, C. B. Abney 1	*	451
Peery-Woody & Young, Duckworth 1-B, blk 7	*	1415
Underwood Drlg. Co. et al, Campbell 17-B, sec 1377	11	976
CLAY COUNTY—		
Sussex Oil Corp., C. J. Shumake 1, lot 4	40	1143
COOKE COUNTY—		
Pace Pet. Co. et al, R. E. Aldridge 8	72	1167
Schermerhorn Oil Corp., M. Kessler 8	70	1309
Seitz-Comegys & Seitz, E. J. Daughty 1	*	1652
JACK COUNTY—		
Beard & Collier, R. R. Clayton 3	36	2975
Brazos River Gas Co., S. A. York 8	97	2940
Camp Drlg. Co., Tom Brown 1	40	3031
Barney Cockburn et al, J. M. Box 1	341	3101
Farris & Powell, C. Thomason 1	*	3020
C. L. Gannaway et al, H. F. Lewis 1	*	741
Hamilton Pet. Co., F. H. Rhodes 4	167	2955
Kimberlin & Howse, Bryson 3-A	*	3017
Royal Pet. Corp., J. A. Raley 2-A	424	3225
Smith & Sumners, Sumners-Kimberlin 2	*	415
Taubert & McKee, Walden 1	40	3030
MONTAGUE COUNTY—		
Arco Oil Co., M. H. Salmon 11-E	99	1630

Permian play enthused by second Robinson producer

Abilene, Texas.—Completion of a second natural flowing well for the Robinson area, Fisher County, has injected fresh enthusiasm in the lease play along the east platform of the Permian basin. Majors and independents moved into the district on a large scale following the recent completion of a prolific producer from the Canyon lime by a wildcat in north-eastern Jones County, acting on the theory that this new deep oil horizon for the county may produce at intervals over a wide area. The Robinson strike in Fisher County failed to maintain interest because of delay in completing the original well.

Flowed 109 Barrels Per Hour

Tide Water Associated Oil Company's E. L. Smith 1, near center of west 55.35-acres of NE¼ H&TC Ry. Section 172, Block 2, proved the Robinson area as an important source of high gravity oil in flowing an average of 109 barrels oil per hour for 11 hours through casing after drilling about one foot into lime, topped at 3509 feet. It was drilled in with cable tools, and on July 18 flowed 108 barrels the first hour, then a few hours later flowed 143 barrels in one hour. It is an east offset

Company, Well and Location	Init. Prod. Bbls.	Depth
Continental Oil Co., N. J. Howard 36	33	1223
W. W. Jones 12	16	870
Gibson-Jennings, Inc. & Sinclair Prairie, Holt 13	284	1666
THROCKMORTON COUNTY—		
G. C. Foster et al, R. H. Brown 1, sec 929	¶4.3	918
WICHITA COUNTY—		
G. W. Cooper et al, Waggoner Bros. 47, sec 2	*	1892
W. T. Waggoner Est. 24-C	276	1636
Douglas Prod. Co., L. P. Douglas 32-A, sec 14	*	943
Jennings Drlg. Co., G. Jennings 4-A, sec 8	15	961
Mogren & Anderson, C. A. Mertins 1, sec 1	*	1605
Perkins-Cullum Oil Co., S. B. Burnett 33, sec 5	15	1382
S. B. Burnett 34, sec 5	*	1603
Geo. Proctor et al, Foster-Allen 13-A, sec 1	*	2072
Mrs. I. L. Pyle et al, Munger Bros. 6, blk 30	40	1093
O. J. Richardson et al, Waggoner Bros. 3, sec 35	3	634
WILBARGER COUNTY—		
J. B. Baker et al, W. T. Waggoner 1-A, sec 7	*	2389
YOUNG COUNTY—		
S. S. Alexander et al, M. L. Clark 5, sec 209	5	845
M. L. Clark 6, sec 209	*	875
J. B. Baker Jr., et al, M. M. Burris 1, sec 1365	*	999
Frank W. Bennett et al, R. V. Tidwell 1	389	3383
V. E. Ekholm et al, J. J. Bavousett 1	*	637
R. B. Farris et al, W. Pickard 1	*	2840
F. H. E. Oil Co., J. K. Jeffrey 5-B, sec 41	*	711
Hawkins & Glover, F. M. Rushing 2, sec 212	12	832
F. M. Rushing 3, sec 212	20	848
T. E. Helms et al, F. Woods 1, sec 81	*	1198
Hinson & Tidwell, S. D. Thompson 4, sec 427	1331	3842
Kimmell, Lee & Co., R. Campbell 8, sec 1370	*	983
Lupton & J. McLester, Medlan 2	110	3742
E. R. Perkins et al, F. Clark 1, sec 208	*	825
Piper & Wilson, S. L. Scott 4, sec 334	18	742
R. J. Watson et al, C. D. Bradshaw 1, sec 712	*	800
Henry Zweifel et al, E. S. Graham 1	93	3496

*Failures; †Junked; ¶Million cu. ft. gas.

to Southern Oil Corporation of America's Joe Robinson 1, which opened this new field, located about three miles northeast of Rotan, flowing by heads on May 15 from lime at 3502-05 feet, with an elevation of 1948 feet. The latter flowed steady through cracked gate valve for more than a week before being closed in to case off open hole below 3248 feet. A string of 7-inch was cemented at 3484 feet, according to Sam Yingling, president, and plugs will be drilled for a production test early this week.

Line Nearing Completion

Pipe line outlet for the Robinson area was scheduled for completion late last week. Tide Water Associated Oil Company was building 4½ miles of 4-inch line from its Smith well to the Rotan field, involving three small wells in a lower lime horizon. The latter are connected by the company's relay line to Shell Pipe Line Corporation's 10-inch trunk line from West Texas.

Lewis Production Company's W. L. Morrow 1, NW NE SW Section 172, about ¼ mile southwest of Robinson 1, was drilling at 2500 feet late last week. Magnolia Petroleum Company has moved in rig to start work on Ella Smith 1, located 330 feet from west and 466 feet from south lines of northeast 64 acres of Section 172, or a northeast offset to the second producer. Other lease owners in the immediate area are formulating drilling programs now that a market is available for the oil.

Southern Oil Corporation of America is moving in rig to drill a wildcat immediately north of Rotan and on the T. L. Ramby 40-acre lease, NE¼ H&TC Ry. Section 170, Block 2. The company holds lease on about 2000 acres.

Avoca Area Leases High

Competition for lease protection around Iron Mountain Oil Company and Humble Oil & Refining Company's C. Olander 1, Canyon lime discovery for the Avoca area, Jones County, has boosted prices to high levels. Trades on acreage near the well have involved drilling obligations. Owners of the well are drilling a northeast offset, and Maracaibo Oil Exploration Corporation and W. L. Pickens' Olander 1, an east offset, was drilling at 1500 feet. Jones and Stasney, largest owners of leases within the discovery block, sold the north 81.7 acres of the SW¼ Section 172, located ⅝ mile southeast of the producer, to L. C. Harrison and Owen M. Murray for $375 per acre cash, and $200 additional from oil, with a drilling obligation. Same parties sold to A. W. Cherry et al a lease on N½ NW¼ Section 199, retaining ⅛ overriding royalty. Sinclair Prairie Oil Company paid $50,000 cash for one-half interest in Fain-McGaha Oil Corporation's acreage spread, aggregating 584 acres, to the north and southeast of the discovery, and the latter is to drill a free test.

W. L. (BERT) CHILDS, general manager Reed Roller Bit Company, Houston, is confined to his home as the result of a fractured leg, received when he slipped on the banks of a creek near Houston last week.

Mount Enterprise test cores saturated lime.

* * *

New peak of activity in big East Texas field.

Tyler.—Barnett Petroleum Corporation's Sanford 1, located on the Mount Enterprise faulted structure, in eastern Rush County, recovered several feet of lime carrying oil stain in coring to 6189 feet. First porosity in the lower Glen Rose section was logged at 6187 feet, with an elevation of 361 feet. Owner plans to take another core and then may attempt a drill stem test.

Tide Water Associated Oil Company et al's McElreath-Suggest 2-C, second Trinity project for the Opelika area, Henderson County, was reaming 54 feet of core hole late last week after coring to 7223 feet, or 6711 feet below sea level. No shows have been recorded. It is located about 800 feet southeast of the discovery well, which continues to flow an average of 9 barrels of 35 gravity oil daily through partially junked hole at 7195 feet, or 6803 feet below sea level. The second test logged top of anhydrite at 6996 feet, or about 8 feet lower than the producer and at 7223 feet is about 22 feet above the first recorded pay zone.

Largest reservoir pressure drop in East Texas field

Kilgore, Texas.—Average reservoir pressure of key wells surveyed each month in the East Texas field by engineers of the Texas Railroad Commission declined 8.2 pounds to 1155.06 pounds. All readings are corrected to a sea level depth of 3300 feet on this monthly check-up of the bottom hole pressure situation. The pressure decline is the greatest recorded in several years, with a total slump of 21.77 pounds for the past six months.

A material change in the bottom hole pressure situation is of vital importance to owners of flowing production in this field. Pressure readings enable engineers to keep tab on the physical condition of the Woodbine horizon, since low pressures precede pumping equipment requirements and accelerate the spread of water.

Law Makes Commission Helpless

In previous years the allowable production of the field has been cut to check rapid pressure declines. This protective measure for the flowing wells is no longer available to the commission, as the average daily production allowable per well is only a fraction of a barrel above the minimum prescribed by an act of the legislature for wells in this depth classification.

Drilling Expansion Responsible

Steady expansion of drilling operations on inside locations within the past two months is to be reflected in the monthly pressure survey. Each completion contributes to a higher field allowable. Wells are being drilled on leases subject to immediate water encroachment, making the aggregate fluid withdrawal daily much greater. Volume of water produced with oil has gained substantially in recent months, and is currently estimated at from 60,000 to 75,000 barrels daily, although an important number of property owners with wells making water disclaim the presence of water.

New peak on drilling activity for the field for this year was reached last week, with a total of 104 rigs in operation. Volume of new locations exceeds completions, indicating a higher drilling rate is possible. The field accounted for 52 completions the past week, and 31 were drilled by independents.

EAST TEXAS

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
British-American O. P. Co., Murphy 8 (38-ac)	8600	3649
Davis & Hart, W. B. Perry 5-C (80-ac)	1500	3677
F. W. Fischer et al, G. W. Eaton 17-B, (21.52-ac)	†	2400
Humble, W. A. Mullikin 22 (166.4-ac)	6800	3725
D. L. Johnson-Olson Bros., J. S. Powers 20 (132-ac)	8000	3710
Magnolia, J. R. Wright 39 (78.1-ac)	8500	3685
Ohio Oil, L. B. Rollins 4 (22-ac)	8200	3673
Sutton & Hawkins, R. J. Vinson 5 (21.6-ac)	800	3631
Wheelis Oil Corp., I. J. Smith 13 (92.2-ac)	4000	3692
KILGORE AREA—		
Adams & Lyles, L. Howard 13 (47.7-ac)	9800	3637
Atlantic Ref. Co., Sally Smith 6 (27.96-ac)	8500	3765
British-American O. P. Co., E. Thompson 6 (25-ac)	7800	3655
Cameron & Tucker, T. H. Gill-Shell 2 (1.7-ac)	4200	3624
L. I. Dodwell et al, L. Alexander 3 (3½-ac)	750	3553
M. T. Flannagan et al, W. B. Walker-Tidal 17 (91.3-ac)	3000	3574
General American Oil Co., J. M. Johnson 3	1500	3557

Company, Well and Location	Init. Prod. Bbls.	Depth
Lon Glasscock et al (was Quad Corp.), Duncan 10-B (40-ac)	800	3594
Grace Oil Co., S. P. Hughey 3 (1.72-ac)	120	3538
E. J. Gray et al, Horton-Dickson 1, blk 120	600	3585
Gulf, W. G. Sexton 20 (165.58-ac)	6200	3695
Magnolia, A. F. Sheppard 5 (415.8-ac)	1500	3565
R. H. Still 8 (45-ac)	*	3625
Meco Prod. Co., Futch-Cooper 8 (62-ac)	2300	3668
Ed. Pace et al, Trip Elder 3 (1.27-ac)	1200	3557
Restal Drlg. Co., F. A. Taylor 3 (10-ac)	480	3616
John W. Russell et al, R. Lacy 5 (267-ac)	5	3535
Salmon Oil Co., W. Smith 7 (9.46-ac)	1200	3557
Shell, J. B. Watson 65 (385.2-ac)	9000	3641
Sinclair Prairie, A. A. King 21-B, Tr. 2 (111.8-ac)	6000	3494
A. A. King 23-B, Tr. 2 (111.8-ac)	5500	3485
Southport Pet. Co., I&GN Ry. Co. 5, Tr. 4 (7.3-ac)	216	3530
Stanolind, W. Clayton 7 (50-ac)	7500	3581
Texola Drlg. Co. (was R. F. Morgan), Benson 4 (47-ac)	900	3659
T. W. M. Oil Prod. Co., Sabine River 6-A, Tr. 1 (1.7-ac)	3000	3597
Mrs. R. H. Vise et al, C. Wells 5 (17.9-ac)	3000	3651
C. Wells 6 (17.9-ac)	2400	3656
LONGVIEW AREA—		
Atlantic Ref. Co., J. W. Moore 77 (447¼-ac)	10,400	3634
Atlantic-Sun, R. C. Barnswell 9-B (49-ac)	10,500	3550
Dean Bros. et al, O. M. Victory 9 (30.29-ac)	2000	3592
Empire, J. W. Akin 17 (100-ac)	11,000	3598
J. C. Bumpas 17 (57.85-ac)	9000	3550
L. A. Jeter 24 (122.24-ac)	9200	3584
Fain-McGaha Oil Corp., E. W. Clements 12 (50-ac)	9600	3637
Gulf, M. O. Sheppard 48 (335-ac)	8400	2495
Humble, J. M. McFarland 11 (66½-ac)	7200	3640
Magnolia, E. H. Brawley 14 (51.56-ac)	10,000	3500
E. H. Brawley 17 (51.56-ac)	9300	3502
Petroleum Corp. of Ven., C. Jones 7 (40.34-ac)	8800	3610
P. H. Pewitt et al, J. T. Jones 6 (46.3-ac)	2400	3815
Rancho Oil Co., J. K. Edwards 16 (106-ac)	4300	3689
Snowden-McSweeney Co., M. Bonner 13 (100-ac)	5000	3648
The Texas Co., E. M. Woods 15 (91½-ac)	5600	3593
Tide Water Associated, C. B. Everett 4 (20-ac)	5200	3504
ANDERSON COUNTY (Cayuga)—		
Tide Water Associated-Seaboard Oil Corp., Ware 15	3500	4095
ANDERSON COUNTY (Long Lake)—		
FHE Oil Co., G. F. Passoney 1 (53-ac)	2000	5366
Hunt Oil Co., E. Tucker 1 (65-ac)	¶40	5396
Tide Water Associated-Seaboard, P. Cooper-F. Ross 1	3000	5314
Tom Reeves 1 (97.96-ac)	800	5288
FRANKLIN COUNTY (Talco)—		
Humble, P. J. Dawson 6 (80.45-ac)	257	4325
HENDERSON COUNTY (Cayuga)—		
Fred M. Allison Prod. Co., Pettiette 6 (99¼-ac)	4000	4091
Roeser-Pendleton, Inc., B. H. Wathen 6 (93-ac)	3600	4100
HOPKINS COUNTY (Sulphur Bluff)—		
Walter L. Goldston, Tr., H. J. Smith 18 (450-ac)	960	4515
TITUS COUNTY (Talco)—		
Adams & Lyles, Pat Davis 13 (41.7-ac)	162	4320
J. R. Milligan-Humble 2 (18¾-ac)	136	4344
Ajo Oil Corp., Dean-Adkisson 1, lot 4, blk 19	176	4285
B. G. Byars et al, W. T. Edwards 2-C (10-ac)	197	4310
Byrd & Frost, Inc., J. Hargrove-Gulf 7 (74-ac)	391	4240
G. M. W. Oil Co., Talco 5-A, lot 3, blk 32	111	4320
W. B. Hinton et al, J. Hargrove-McLean 3 (20.46-ac)	482	4316
Humble, L. Stevenson 2 (88.1-ac)	30	4317
I. N. Williams 3 (39.86-ac)	174	4322
Lucey Pet. Co. et al, I. N. Williams 2 (319.85-ac)	427	4286
Magnolia, J. A. Chapman 2 (341¾-ac)	*	5661
C. M. Carr 7 (70-ac)	244	4278

Company, Well and Location	Init. Prod. Bbls.	Depth
VAN ZANDT COUNTY (Van)—		
Humble, L. K. Riggs 1-A (74.2-ac)	*	6325
DELTA COUNTY—		
F. J. Estes et al, W. S. McGee 1 (207-ac)	*	4001
FREESTONE COUNTY—		
Pansy Oil Co., R. B. Longbotham 1	*	2200
CASS COUNTY (Rodessa)—		
Magnolia, W. M. Hall 3, Alex Archer sur	390	6064
United Gas, Allday 3, Priscilla Evans sur	384	5985
MARION COUNTY (Rodessa)—		
Mid-Continent O&G Co.'s Sory 1, A. de los Santos Coy sur	840	6101
HARRISON COUNTY—		
Patsam Oil Co., Vincent 3, J. P. Harrison sur	12	2357

*Failures; †Junked; ¶Million cu. ft. gas.

23-pound drop in Rodessa bottom hole pressure

Shreveport.—The weighted average bottom hole pressure on the Louisiana side of the Rodessa field dropped 23 pounds during June to an average pressure of 1745 pounds, a daily average loss of .77 of a pound for the 30-day period, according to data compiled by the engineers of the Rodessa Operators Committee.

The data represented pressures as indicated by 77 key wells in the Young horizon and 8 in the Gloyd. The average pressure on July 7, 1936, was 2314 pounds. It was on this date that bottom hole pressure gauges were begun

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San Patricio test either new sand or new field.

* * *

Frio County test passes 10,350 feet, still going.

* * *

North Sweden revived by third sand discovery.

Corpus Christi. — McCampbell field was being extended about two miles southwest or a new San Patricio County field was being uncovered by Danray Oil Company's Jean Davis 1A, which cored an oil sand reported to be at 6601-6 feet and set 7-inch casing. The well is closed on information, and the above sand depth record is not certain.

This well is 330 feet southeast of the highway and 330 feet from the southwest line of tract 5, William Boyd Survey. It likely is in the same general sand section with the Marginulina production in the McCampbell field to the east, but may be in another local lens.

Several Hold Offset Acreage

The above well is offset on the west by acreage held by Humble Oil & Refining Company, on the north by Buckingham Oil & Gas Company, and close in holdings are by Sun Oil Company, Empire Gas & Fuel Company, Clayton H. Eaton, Atlantic Refining Company, Danrey Oil Company and others.

Approximately 6500 feet farther southwest, Humble Oil & Refining Company's John S. McCampbell 1, R. Martinez Survey, is coring ahead below 7105 feet after finding a gas sand at 7067-72 feet and sandy material to near the total depth carrying a slight odor. Several attempts to test were of no avail. The test is at about the same level as the first 7000-foot sand of McCampbell field.

Swabs Dead Oil; Shuts Down

Still farther west, and two miles southeast of Gregory, Eleanor Oil Comany's J. F. Green Estate 1, Williamson Survey, is shut down after swabbing dead oil and wash water through perforations at 6566-74 feet. The test had been drilled to 7305 feet, testing salt water in the lower sands. It was the fourth test drilled in the immediate vicinity of Gregory, all of which tested salt water in the various sands.

13 Rigs Active in McCampbell

McCampbell field is receiving a rather active campaign with 13 rigs running, practically all being directed to the 7100-foot horizon.

Still farther east and in Aransas County, Barnsdall Oil Company's Kate Edwards 1-A, Lamar prospect, was changing boilers at 9292 feet.

Refugio County's wildcatting campaign has several interesting tests. Conroe Drilling Company's Kloesel 1 is drilling ahead after setting surface casing. It is on a geophysical prospect just southeast of Bonnie View.

Edwin M. Jones' Ben Shelton 1, on the east side of Refugio field, was eliminated from the active list, being abandoned at 7965 feet, while United Production Corporation's J. J. O'Brien 12, about 2800 feet southwest, is shut down at 9225 feet.

Randon Oil Company and American Liberty Oil Company are working on a deal to deepen J. Vincent 1, Section 41, northwest of Greta to 8000 feet, which will carry it into the Cockfield. It is shut down at 6014 feet in the Vicksburg.

Has Distillate Show

Magnolia Petroleum Company's A. A. Seeligson 7, southeastern Jim Wells County, was coring ahead after developing 50 feet of distillate, no mud and no water under 1000 pounds pressure on an 8-minute drill stem test at 6167-91 feet. Bottom hole test at this level was 3350 pounds. A string of 9⅝-inch casing was set at 6160 feet for protection, the well being projected to 9200 feet.

Several Vicksburg sand tests are holding interest in Nueces County. L. M. Lockhart's Ollie Purl 1, at Agua Dulce, is sidetracking to drill by stuck drill pipe at 7052 feet. United Production Corporation is down around 6500 feet in M. L. Rivers 3-A and near 5000 feet in T. S. Schroeder 1, both being in the Agua Dulce area.

Graham and King Wood open fourth sand at Samfordyce

Mission. — Another new sand lens, fourth and deepest for the field, appears to have been opened in Samfordyce field through the completion of a Frio sand extension well. E. A. Graham and King Wood Oil Company's Yturria Land and Live Stock Company 1 flowed at the rate of 350 barrels of 23 gravity oil per day through ⅜-inch choke under 400 pounds working pressure on tubing.

The well topped the sand at 2995 feet. It continued to 3033 feet, followed by a two foot shale break. Sand then continued to 3039 feet, the bottom of the hole. The last four feet, however, carried a salt water odor and showed a little water when drill stem test was run. Casing was set at 3035 feet and perforated at 2995-3007 feet, where completion was effected.

May Lead to Development in Northwest Sector

The well is in the southeast corner of a 100-acre lease in Portion 38 and is ¼ mile north of the producing limits. The sands now productive are at 2750, 2850 and 2950 feet, and the new sand is slightly below the latter. Its prolific appearance gives rise to a possible development campaign in the northwestern sector of the field.

K. E. Merren is sidetracking at 5053 feet to recore the sand in Starr County Cattle Company 1, discovery well of Cockfield sand production in Barbacoas field, Starr County. The well originally was completed at 5418 feet making a large volume of gas and spraying a little oil.

Deepest in South Texas headed for 11,000 feet

San Antonio. — Amerada Petroleum Corporation was drilling ahead below 10,350 feet in Halff and Oppenheimer 8, Pearsall field of Frio County, after running a 7-inch protection string of casing at 10,341 feet. This well is in the upper portion of the Trinity and is projected to possibly 11,000 feet or deeper if production is not found. It already has reached the deepest level in South Texas.

About 2½ miles southwest of the same field, this concern is preparing to drill plugs again in Harrigan 1, to test the Austin chalk. The casing developed a leak at 3290 feet, requiring recementing. It is bottomed at 3290 feet.

Frio County Wildcat Fails

Another Frio County wildcat proved a failure in the Edwards limestone, being Pagenkopf and Kamiseon's Blackaller Estate 1, in the northwestern portion of the county. It topped the lime at 3219 feet and drilled in 51 feet. The test had had a show in the Navarro at 1999-2018 feet.

SOUTH TEXAS Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
SAN ANTONIO DISTRICT		
BASTROP COUNTY—		
R. Pulliam, A. Yost 1, A. Garcia Sur. (Yost)	20	1548
Schobe-Feldott Oil Co., B. L. Duran 2, L. Flint Sur., (N. Dale)	104	2341
CALDWELL COUNTY—		
Allbright & Pulliam, Lampkin 1, John Henry Sur., (Luling)	305	2149
Chiquita Oil Co., C. F. Robertson et al 6, John A. Neill Sur., (Branyon)	15	2198
Louis Crouch, Ed. Starcke 5, C. Crenshaw Sur., (Larremore)	20	1303

Company, Well and Location	Init. Prod. Bbls.	Depth
Easton & F. Manning, N. B. Bozarth 1, C. M. Cannon Sur., (Buchanan)	40	2042
Goode & Mayton, B. J. McConnell 2, Wm. Spiller Sur., (Buchanan)	*	2288
Lincoln Pet Co., F. M. Branyon 7-B, D. Cooper Sur., (Branyon)	276	2160
McAlester Fuel Co., R. Brown et al 1-A, C. M. Cannon Sur., (Buchanan)	105	2258
Spokane Oklahoma O&G Co., K. Dougherty 1, 1600 ft swl & 150 ft sel of 215-ac tr in J. Tyler Sur.	*	2020
Taylor Ref. Co., F. M. Branyon 5-A, Dillard Cooper Sur., (Branyon)	80	2323
W. M. Vaughey et al, W. S. Clark 2, John R. Miller Sur., (Branyon)	60	2175
M. O. Flowers et al 6, Dillard Cooper Sur., (Branyon)	35	2145
Webster Oil and Gas Co., W. A. Magee 1, John A. Neill Sur., (Branyon)	40	2224
F. R. Williams, H. L. Rodenberg 1, 150 ft w of Lockhart rd & 2000 ft sel of 250-ac tr in James Berry Sur. (Luling)	12	2114
DIMMITT COUNTY—		
Wilcon Oil & Gas Co., Light Ranch 1, 330 ft north and el of sec 67, I&GN Sur., Sur. No. 527 blk A.	*	8048
FRIO COUNTY—		
Amerada Petroleum Corp., Halff & Oppenheimer 1, W. F. Halsel Sur., (Pearsall)	88	6341
GUADALUPE COUNTY—		
L. G. Denman, Tr., Fee 2, William Arrington Sur., (Darst Creek)	40	2450
Ralph E. Fair, Inc., Fritz E. Hemple 1, 150 ft nl and wl of s 28-ac of 57.17-ac tr G. W. Williams Sur., (Sal Mar)	*	2240
Saxet Production Co., Katie Lay 2, Jose K. Davis Sur., (S. Darst Creek)	*	2782
TRAVIS COUNTY—		
J. F. Jourdan, Dr. J. V. Siegmund 1, 1011 ft sl 546 ft wl of 447-ac tr in A. M. Leavy Sur.	*	805
CORPUS CHRISTI DISTRICT		
ARANSAS COUNTY—		
Buckingham Oil Co., McCampbell Ranch 11-A, Lot 7 Blk 41, (McCampbell) perf 7120-26 ft.	580	7134
McCampbell Ranch 12-A, James Orrick Sur. (McCampbell) perf 7099-7109 ft	200	7135
Shasta Oil Co., McCampbell Ranch 1, Lot 13 Blk 10, (McCampbell)	*	lcn
CALHOUN COUNTY—		
Humble & Plymouth, E. H. Welder 9, J. M. Rios Sur., (Heyser)	956	5450
P. H. Welder 14-B, Agaton Sisneros Sur., (Heyser)	*	lcn
HIDALGO COUNTY—		
Young & Bonneau Oil Corp., M. Garcia Heirs 1, Sh 14 Por 41, (Samfordyce)	*	lcn
JACKSON COUNTY—		
The Texas Co., Martin Hultquest 1, D. Dempsey Sur., (Ganado) perf. 5093-5100 ft, sd/td 5102 ft	60	5150
JIM WELLS COUNTY—		
Tom Graham and Gilcrease Oil Co., C. M. Laughlin 2-B, Lots 62 & 67, Sec. 77, Haldeman Subd. Seeligson Ranch, S. K. & K. Sur., (Premont)	281	2251
C. M. Laughlin 4-B, S. K. & K. Sur. (Premont) perf 2248-52-ft.	39	3945
Memphis Natural Gas Co. and Smith Drilling Co., W. D. Wade 1, from N/cor of Blk B Bode Subd go 2034 ft se along nel, thence ne at r/a 2100 ft, (Sandia)	*	5405
KLEBERG COUNTY—		
John F. Camp Prod. Co., C. Phillip Wardner, Trs. 3, 3816.8 ft n of sl & 466.7 ft w of el of E/2 of Paco Ancho de Arriba Gr, 3 mi s of Stratton field	*	lcn
NUECES COUNTY—		
R. B. Bryant, Fred Frank 6, Geo. Frank Sur. No. 416, (Saxet) perf. 6920-24 ft.	495	6970
Crown Central Pet. Corp., J. B. Hunter 5, Sur 591, (Saxet)	444	4407
Rand Morgan 8-B, Sur 315 and 592 (Saxet) perf. 3988-95 ft.	¶1	4460
Hiawatha O&G Co., Hutchins-Stillwell 11, Blk 34, Sheppard Farm Lots, (Saxet)	516	5841
Houston Oil Co., T. M. Harrell 4-A, Blk 28, Sheppard Farm Lots, (Saxet)	271	4850
Rand Morgan 27, 493.62 ac lse, (Saxet)	193	4860
W. W. Walton 6, 274.44-ac tr E. Villareal Gr, (Saxet) perf 4058-64 ft	65	4875
H. H. Howell et al, W. S. Hutchins 5, Sur. 416, (Saxet) perf 3996-4004 ft.	360	6998
Humble and Barnsdall, Josie Miller 4-B, Lot 3, Blk 48, Flour Bluff & Encinal Garden Subd. (Flour Bluff)	540	6670
Elizabeth Roberdeau et al 1, Lot 8, Blk 49, Flour Bluff and Encinal Garden Subd. (Flour Bluff)	405	6665
Richardson Pet. Co., J. B. Sedwick 8, J. Dunn Sur. 312 (Saxet)	504	4858
Southern Minerals Corp., Bessie Elder 4, G. C. & S. F. Sur. No. 311, (Saxet)	313	4881
REFUGIO COUNTY—		
Illinois Pet. Co., Ira Heard 6, M. J. Ximines Sur. (Greta)	1920	5945
Quintana Pet. Corp., Tom O'Connor 51-A, J. M. Swisher Sur. No. 3 (Tomoconnor)	2049	5909
VICTORIA COUNTY—		
Commonwealth O&G Co., W. H. Bennett 5, J. E. Galban Sur., (Heyser)	495	5753
LAREDO DISTRICT		
DUVAL COUNTY—		
Argo Oil Company, Juan Carrillo 2, Sec. 9, Sweden Subd. Santos Flores Gr. (N. Sweden)	217	4797
Juan Carrillo 3, Sec. 9, Sweden Subd. Santos Flores Gr. (N. Sweden)	576	4773
Colmena Oil Co., DCRC 7, Blk. 12, Sec. 51, (Colmena)	75	1502
N. V. Duncan, Worden-Drought 11, Sur 151, (Charamousca)	135	1526
Hiawatha O&G Co., George Herberger 2, Sec. 14, Ball Ranch Subd. Agua Poquita Gr. Santos Flores Gr. (Sweden) owwo, perf 5080-84 ft	144	5084
Humble O&R Co., DCRC 7-D, I&GN Sur., (Colmena)	156	1441
Roos Brothers 3, Sec. 119, B. S. & F. Sur. (Labbe)	66	2846
Magnolia Pet. Co., J. Benavides 8, Blk. 32, O'Hern & Seacoard Subd. (Cole-O'Hern)	*	4028
John J. O'Hern, S. Benavides 7-C, Blk. 24, O'Hern & Seacord Subd. (Cole-O'Hern)	768	2877
Geo. Parr Oil Co., W. W. Meek 1, 330 ft el & sl of a 100-ac lse in Sur. 212, (Seven Sisters)	*	2968
Standard Oil Co. of Kansas, Mabel Rossi 1, 330 ft nl & el se¼ blk 10 Sweden Subd. Santos Flores Gr. (N. Sweden)	450	4797
The Texas Co., D. Ruiz Estate 6-B, Sur. 41, Ruiz Tr. (Loma Novia)	144	2712
Westheimer & Daube, Z. Campos 34, J. Poitevent Sur. Sec. 224, (Seven Sisters)	168	2707
McMULLEN COUNTY—		
Smith & Story, A. J. McKean, Sr., 1, 2700 ft nl and 2080 ft el sec 200, M. R. Vela Sur. A 483	*	1765
STARR COUNTY—		
Cook, Maris, Arnold, Starr County Cattle Co. 2, 330 ft nl & el blk 23, Cook, Maris, Arnold Sur. Por. 89	*	2465
E. A. Graham & King-Wood Oil Co., Yturria Land & Livestock Co. 1, 230 ft n & 250 ft w of se/cor of 100-ac lse Por 38 (Samfordyce)	108	3039
K. E. Merren, Starr County Cattle Co. 1-A, 625 ft el, 395 ft sl of blk 34 of Jefferies & Lambeth Subd. in Por. 89 (Barbacoas)	75	5418
Henry Mode et al, Kelsey Bass 1, 330 ft nl & el Blk 7	*	3507
Palmetto Oil Co. (Carter & Stiernberg), Quirino Vela 1, 150 ft nel & nwl lot 1, Blk 4, of el Tangue Ranch Sub. & in Por. 85 (S. Ricaby)	*	1840
Quirino Vela 2, 150 ft nwl & nwl blk 9, El Tangue Subd. Por. 84 & 85 J. of Camargo (S. Ricaby)	*	1820
Sun Oil Co., G. P. Wardner 2, B. Vela Sur. (S. Ricaby)	¶15	1798
WEBB COUNTY—		
O. W. Killam, Laurell Brothers 3, Sur. 333, Blk. 21 (Killam)	*	2069
C. H. Lewis, A. Lopez 11, Sur. 110, (Lopez)	100	2309
Magnolia Pet. Corp., Brennen-Benavides 45, Myrtle E. Hale Subd. Blk. 57, Mariano Arispe Gr. (Cole-Bruni)	*	3740
Paul Meaders et al, Garcia & Villareal 1, 150 ft nl & el Blk. 5, Sec. 338	*	lcn.
ZAPATA COUNTY—		
R. W. Roscoe, C. Bustmante 23, Sh 33 Fansler Part. Comitas Gr. (Escobas)	30	1197
The Texas Co., Whitehead 102, Cerrito Blanco Gr. (Escobas)	35	1251

*Failures; †Junked; ¶Million cu. ft. gas.

Navarro discovers third sand for North Sweden

San Diego.—North Sweden, Duval County, which received a material setback by the failure of lower Cockfield to produce, took on a much brighter complexion when Navarro Oil Company's Mable Rossi 1 flowed from the upper portion of that formation. The well opened the third oil producing horizon for this field.

Is Extension Also

Rossi 1, NE SE Section 11, and about ¾ mile west of the field, drilled to 6179 feet, topping the expected producing horizon at 5430 feet, which continued to 5472 feet. Considerable of it was shaley, the upper portion carrying slight oil odor and the lower portion salt water. An electric formation tester was run, which indicated a sand at 5030-42 feet, the well then being plugged to about 5350 feet and 5½-inch pipe cemented at 5320 feet. The well was swabbed in, started flowing, and then went dead several times. At last reports, it was flowing by heads making about three barrels of 45.3 gravity oil per hour through 1/16 inch choke. The pressure on the casing builds up to as high as 720 pounds and drops off to practically nothing, the tubing, likewise, builds up to 170 pounds and drops to zero. Continued testing may result in steady flow.

Importance of Sand Unknown

This sand is about the same position in the section as the Pettus sand and may result in a lens of considerable importance. The Navarro Oil Company is the first well in the field to be carried deep enough to test it, so others will be required to determine its true importance.

Heretofore, the field has been producing from two sands, one at 4750 feet, corresponding to the upper Government Wells sand, and the other at 4800 feet, which is equivalent to the lower or main Government Wells sand. These sands have tentatively been named: 4750-4800 feet, upper and lower Gravis sand; 5330 feet, Navarro sand; 5900 feet, Hiawatha.

The upper Government Wells horizon has been proved productive in the main Sweden field, several miles south of the North field, by Hiawatha Oil & Gas Company's George Herberger 2, which pumped six barrels of oil and a little water per hour from perforations at 5080-84 feet. This well was a failure in the Cockfield at 5914 feet. The above test was completed several weeks ago as a very small well, but output was materially increased by a workover job.

Field Extended Southwest

The field was given a southwest extension by Hiawatha Oil & Gas Company's M. M. Miller 2, which is a gas well spraying gasoline through ⅛-inch choke and showing pressures of 2050 pounds on tubing and 2100 pounds on casing after coring sand at 5854-66 feet and perforating at 5854-64 feet with 20 shots. It is the third producer in the lower Cockfield in Sweden and indicates that production will trend southwest. About two-thirds of a mile north of this field, Southland Life Insurance Company 3 was coring at 6018 feet.

Efforts are being made to widen the

Sweden field two miles to the east or open a new pool. King Drilling Company's Parr 1, San Andres Grant, drilled to 6531 feet, plugged back and perforated in sand section at 5933-50 feet. It was testing at last reports.

Thomas-Lockhart Outpost To Test

Lockhart Brothers recovered a little oily mud at 4688-4712 feet in the Pettus sand in Parr 1, Section 277, about one-half mile southwest of the Thomas-Lockhart field. Another core was taken and the well was scheduled to run a new drill stem test.

Over in Webb County, a 3000-foot south extension was being provided to the Killam field, by O. W. Killam's D. G. Garcia 7, Section 786, which cored oil sand at 2002-9 feet and set casing. It was drilling plugs preparatory to completion as the week closed.

C. C. Shumway et al's Shiner Ranch 10, NW NE NE Section 51, wildcat in Southeastern McMullen County, swabbed salt water with a scum of oil from Government Wells sand at 1575-84 feet.

Interesting Four Spot Program

Edwin M. Jones is carrying on a rather interesting development on the Ezzell ranch in McMullen County. Locations were made for Ezzell 8, 9, 10, and 11, forming a square 660 feet apart. The 1550-foot sand is cored, casing set on bottom and cemented in the first well; rig then skidded to the next location and the same process repeated. As soon as the complete round is furnished, the light rig is skidded back to the first well on the square, pipe perforated and the well completed, the same round being made as on the drilling. The shallow wells can be drilled very rapidly and by skidding the rig, it is not necessary to wait the usual 72 hours for cement to harden. Skidding of the rig from one location to the other takes only several hours. The plan is being experimented with on these four locations, and if it proves an economical measure, it will be adopted as a regular practice.

700 producing wells in Rodessa area

Shreveport.—When the Rodessa field chalked up its 700th oil well only a few days after it celebrated its second anniversary as an oil field, it found the per-well average of the field 126 barrels, with the one well in Arkansas averaging 349 barrels, the 313 in Texas averaging 119 barrels and the 386 in Louisiana averaging 130 barrels.

Following is a tabulation by companies showing the number of wells owned by each in each state of the Rodessa area and the companies' daily average production:

Company	Wells La.	Tex.	Total	Daily Average Prod.
American Liberty..	3	25	28	2,618
Arkansas-Louisiana	28	3	31	1,135
Magnolia	36	84	120	20,463
R. W. Norton	9	12	21	4,314
Ohio	—	14	14	1,624
Phillips	26	18	44	6,164
Standard of La....	65	—	65	9,580
Tidewater Assoc. .	13	3	16	890
Texas Company ..	—	25	25	3,343
United Gas	133	81	214	28,441
Others	73	48	*122	9,462
Total	386	313	*700	88,034

*One in Arkansas.

TEXAS GULF COAST

Attention shifts from Friendswood to deep tests.

* * *

New gas sand below 10,000 feet south of Labelle.

* * *

Salt water in producing sand west of Turtle Bay.

Houston.—Since the discovery of Friendswood, Harris County, interest in the Texas Gulf Coast has been centered around deep field and wildcat drilling wells.

Probably the most important wildcat drilling in this area is Superior Oil Producing Company's J. A. Butler 1, Bammel prospect, J. Ehrhardt Survey, Harris County. July 23 it was down to 9898 feet in shale and sandy shale showing gas. The well has encountered a number of gas shows, but little information is being given out on sand sections. It is generally thought the wildcat will not go much deeper before an electric logging device is run. J. A. Butler 1 is below the Cook Mountain formation and is searching for a producing sand that heretofore has never produced that far down dip. The wildcat is also the deepest well in this section to encounter formations below the Cook Mountain.

Sun Discovers Gas Sand

South of production at Labelle, Jefferson County, Sun Oil Company discovered a new gas sand below 10,000 feet last week. J. Ward Estate 1 topped a sand at 10,043 feet which blew the core barrel up to the crown block. The well was brought under control after pumping in over 1700 sacks of special drilling mud. Ward Estate 1 is bottomed in sand at 10,046 feet, and at last report the company was preparing to core ahead into the sand. Nine and five-eighths-inch casing was set at 9951 feet, the longest string of this size ever set.

New Record Looms

Harrison & Abercrombie will probably break their own record for deep production in the Texas Gulf Coast. The operator's Bernard River Land & Development Company 4, Old Ocean field, Brazoria County, was running five-inch liner for a production test next week. Liner was set at 10,776 feet onto seven-inch casing which had been set at 10,415 feet. Bernard 4, 1738 feet south of Bernard 3, is the deepest well ever drilled at Old Ocean and sand and shale showing oil have been cored from 9800 feet to bottom. The liner will be perforated at several levels.

Harrison & Abercrombie already hold the record for the deepest producing well in Texas, when a well was completed around 10,200 feet. If Bernard 4 comes in below that depth then it will be the deepest producing well in the Gulf Coast.

Four Hastings Edge Wells Completed

On the east and northwest side of Hastings field, Brazoria County, Humble Oil & Refining Company completed two wells. On the east side South Texas Grain Company 2 made 205 barrels of pipe line oil daily through a quarter-inch choke from Frio sands at 6125 feet. Top of the sand was logged at 6118 feet and 5½-inch casing was cemented at 6109 feet. On the northwest side of the field, Mason 1 gauged 657 barrels daily through a quarter-inch choke from Frio sands topped at 5758 feet. The hole was drilled to 6029 feet in sand, and 5½-inch casing was set at 5750 feet.

On the northeast side of Hastings Navarro Oil Company completed Beers C-1, center of Lot 92, Perry & Austin Survey, Galveston County, flowing 25 barrels per hour through a quarter-inch choke from 6065 feet. Beers C-1, is approximately 1700 feet southwest of Albert Plummer's Brown 1, which was abandoned at 6190 feet.

On the south side of Hastings field and on the down throw side of a fault, Stanolind Oil & Gas Company abandoned V. Stockwell 1, Hannel Stevens Survey, at 6198 feet after coring salt water sands. This is the fifth well abandoned at Hastings.

Abandon One West of Turtle Bay

West of production at Turtle Bay field, Chambers County, Stanolind Oil & Gas Company abandoned Mayes Estate 1, E. H. R. Wallis Survey, after drilling to 6863 feet in Frio formation. The well encountered salt water sands in the regular producing horizon.

In Montgomery County, J. W. Philfner made location for W. E. Spiller 1, 2100 feet north and 15 degrees west and 150 feet north and 75 degrees west from the southwest corner of R. Marsh Survey. The wildcat is northwest of Conroe and north of the dry holes drilled by Shell Petroleum Corporation.

Approximately 1½ miles east of Jack Frazier's Hanchey 1, he was preparing to perforate casing on Roberts 1, H. B. Johnson Survey, Hardin area, Liberty County. The hole was drilled to 7628 feet in water sand and 5½-inch casing was set at the bottom. Casing will be perforated

at 7568 to 7580 feet. A gas and distillate sand was cored at this depth.

East Extension For Silsbee

East of production at Silbee field, Harris County, Republic Production Company was setting seven-inch casing in Brooks 18, G. W. Brooks Survey, at 6915 feet. A drill stem test on the east extension well recovered 15 joints of pipe line oil along with a 90-pound pressure in eight minutes from 6905 to 6915 feet. The company is preparing to make a drill stem test on Brooks 17. The hole is bottomed in sand showing oil at 6936 feet.

Humble Oil & Refining Company drilled its first dry hole at Silsbee last week. Kirby Lumber Company 2, 933 feet east of Kirby 1, J. Ellery Survey, was abandoned at 7000 feet and finding salt water in the regular producing horizon.

La Quinta Oil Company's Wing 3, Segno field, Polk County, was completed July 22 flowing 15 barrels of 43 gravity oil per hour through a quarter-inch choke after casing had been perforated from 5264 to 5267 feet. The well had a tubing pressure of 400 pounds and a casing pressure of 850 pounds.

To Drill Carter Land

H. E. Williams & Thompson, who made location for W. T. Carter & Brothers 1 northwest of Segno, Polk County, were preparing to spud in at the end of the week. However, the well will be carried under the name of Humble Oil & Refining Company, which has a lease on all, or nearly all, of the W. T. Carter land in Polk and Tyler Counties. The leases called for a continuous drilling obligation. W. T. Carter & Brothers 1 is the first of the operations to start on the land. If this well should be dry, another location will be made. Humble Oil & Refining Company has to continue drilling on the property or surrender the leases. It is reported that the company started to farm out 200 acres to Williams & Thompson but a clause in the contract between Humble Oil & Refining Company and W. T. Carter would not permit such.

In Colorado County, another failure was reported for Garwood area. Coyle Concord abandoned Powell 3, I. & G. N. No. 40, at 6170 feet after coring salt water sand. Top of the sand was logged at 6160 feet.

TEXAS GULF COAST Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
AMELIA—		
Humble, Atkinson 1	648	6776
Harry McCormick 1	96	6778
ANAHUAC—		
Humble, Shaver	¶¼	7135
Zappe 9	624	7080
BARBERS HILL—		
McAlbert Oil Co., Woodward 6	20	5054
BLUE RIDGE—		
Gulf, Fee 8	*	lcn.
CLAY CREEK—		
Sun, Draeger 6	*	5350
DICKINSON—		
Humble, M. Stewart A-20	816	8950
Stanolind, State 7	360	9088
Turman Oil Co., Stewart & Carl 2	120	8791
FIVE CORNERS—		
Texas Co., Pierce Estate B-7	10	5555
HASTINGS—		
Humble, Brown 11	456	6100
Brown B-5	624	6080
Mason 1	657	6029
South Texas Grain 2	205	6125
Stanolind, Blount 4	528	6080
Guide 4	672	6080
McKibben 2	630	6157
Shaw 7	619	6157
Turner 8	362	6080
HULL—		
Gulf, Baldwin 24	¶1	5060
NOME—		
Shell, Unit B-3	480	6048
SILSBEE—		
Humble, Kirby Lbr. Co. 2	*	7000
SUGARLAND—		
Strake, Deatheridge 1	*	4350
THOMPSON—		
Texas Co., McCall 3	75	5380
TOMBALL—		
Humble, Burlington & Rock Island 3	600	5572
TURTLE BAY—		
Stanolind, Mayes Estate 1	*	6863
WEST BEAUMONT—		
Stanolind, J. W. Hall 2	*	lcn.
Sargl 4	¶1	5865
WITHERS—		
Texas Co., Pierce Estate C-34	96	5560
COLORADO COUNTY—		
Coyle Concord, Powell 3, Garwood area, I&GN sec 40	*	6170

*Failures; †Junked; ¶Million cu. ft. gas.

New Pettus sand oil field in Karnes County

Beeville.—A new Pettus sand oil field was discovered in southern Karnes County by Pettus Oil & Refining Company's Mrs. R. A. McKinney 1-A, which cored sand at 3645-51 feet and on an eight-minute drill stem test through ¼-inch chokes, top and bottom, recovered 400 feet of 42 gravity oil with a good gas blow. Casing was set and the plugs were being drilled at last reports.

The well is 750 feet from the north line and 330 feet from the east line of an 856.77-acre tract in the R. C. Ballard Survey, just north of North Pettus field. It offsets leases held by Luling Oil & Gas Company, which drilled the well.

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Venice prospect becomes second field on delta.

* * *

Charenton gets new sand and 2000-foot extension.

Lake Charles.—The second oil field was discovered on the Mississippi delta July 18 when Tide Water Associated Oil Company completed Manhatten Fruit Company 3, east side of Venice salt dome, a reflection seismograph prospect in Section 26-21s-30e, Plaquemines Parish, flowing 9 barrels of 38 gravity pipe line oil per hour into a barge through 5/32-inch choke, with tubing pressure of 900 pounds and casing pressure of 825 pounds, from Miocene sands at 7180 to 7208 feet.

The well is 460 feet east of Manhatten Fruit Company 2, abandoned at 7273 feet some time ago. Seven-inch casing was cemented in No. 3 at 7190 feet, and screen and liner run preparatory to the production test.

Venice is the second oil field discovery for Tide Water Associated Oil Company in the Louisiana Gulf Coast. The first was St. Martinville, St. Martin Parish.

The company has approximately 12,000 acres around Venice. It acquired part of the acreage from Southern Sulphur Company in taking over the latter's Manhatten Fruit Company 1. Tide Water drilled 3 wells on Venice dome before striking oil. The second well the company drilled on the east side of the salt dome had several showings of oil, but the sand was not thick enough to make a production test.

Gulf Found Prospect

Credit for discovery of Venice prospect goes to Gulf Refining Company, which worked the area with reflection seismograph in 1928. The dome was proven for salt when the company drilled Burras Levee Board 1 and encountered cap rock at 2216 feet. Gulf drilled two dry holes on the dome, both of which encountered a heavy gas pressure around 800 feet. After drilling the dry holes, the company farmed the acreage out to E. A. Howe. E. A. Howe drilled Burras Levee 1 on the east side of dome and encountered several shallow showings of oil from 1500 to 1800 feet. The hole was later abandoned at 2119 feet. The operator then drilled Burras Levee 2 to 3189 feet, where it was abandoned. Later Southern Sulphur Company drilled Manhatten Fruit Company 1 to 3510 feet, when Tide Water Associated took over the operations.

Watch Black Prince

Probably the next new oil field for the Louisiana Gulf Coast and the first for St. Charles Parish is Black Prince Island, St. Charles Parish. Amerada Petroleum Corporation and Louisiana Land and Exploration Company were waiting on cement to set in State 1, after squeezing cement through perforations at 6820 to 6830 feet where a drill stem test through perforations showed 22 stands of gas cut mud with a trace of oil. The second drill stem test, made in 11 minutes, showed 12 stands of oil, 2 stands of salt water, 1 stand of mud, and a good blow of gas. The test was made through ¼-inch choke on bottom and ⅜-inch choke on top of the testing tool. The oil tested 33.5 gravity at 90 degrees. The water is believed to be coming in from below.

Charenton Extended

Charenton field, St. Mary Parish, was extended 2000 feet southeast when a new sand was found in Pan American Production Company's South Coast Corporation 1, Section 30-13s-10e. Casing was perforated from 4955 to 4980 feet in Miocene formation and the well flowed 16 barrels of 31.8 gravity pipe line oil through 3/16-inch choke, with tubing pressure of 1100 pounds and casing pressure of 1155 pounds. When the well was first brought in it was making 25 barrels per hour through ¼-inch choke and showed sand. The chokes were reduced to 3/16-inch size to overcome the sand condition.

Pan American Production Company has tested three new sands in South Coast Corporation 1. The hole was drilled to 7923 feet after missing the regular producing sand. A sand was logged at 7908 feet. After making a setting, the well came in May 4 making 311 barrels of 34.6 gravity oil in 12 hours through ¼-inch choke. Tubing pressure was 800 pounds and casing pressure was 700 pounds. Later the well started making salt water, and after a number of squeeze jobs the hole was finally drilled down to 8503 feet. Casing was perforated from 8424 to 8430 feet and at this level the well showed salt water. The hole was then plugged back and perforated from 7910 to 7915 feet and got salt water. Casing was again perforated with 10 shots from 7187 to 7193 feet and the well showed gas and oil along with some salt water. A cement retainer was set and the casing was perforated at 4980-foot depth.

Charenton is considerably faulted and there are several possible producing horizons. The only two horizons that are productive to date are the 7200 and the 4980-foot sands.

Pan American Production Company and The Texas Company have announced location for Veeder-Hunt 1, approximately 1100 feet north of South Coast Corporation 1, Section 30-13s-10e, St. Mary Parish. They will drill the well on a 50-50 basis. The well will be carried as Pan American Production Company et al's Veeder-Hunt 1.

SOUTH LOUISIANA Completions

Company, Well and Location	Init. Prod. Bbbls.	Depth
CHARENTON—		
Pan American, South Coast Corp. 1, (wo) dr to 8503 ft, perf fr 4955 to 4980 ft.	384	8503
GILLIS—		
Union Sulphur, Powell Lbr. Co. 18, (wo) otd 6730 ft, pb 6682	265	6678
State 12 (wo), otd 7550 ft, perf 7525-32 ft	¶1	7532
JENNINGS—		
Superior, Iowa Jennings 2	522	7026
Leckelt 2, (wo), perf 6390-6420 ft	286	6420
Moresi 1	565	6732
IOWA—		
Shell, Heyd 26	565	4461
LOCKPORT—		
Magnolia, Freiburg & Wolf 6	650	6937
EAST HACKBERRY—		
Stanolind, Gulf Land Fee B-25	*	7672
WEST HACKBERRY—		
Emanon Oil Co., Porter Ellender 1	*	1650
PLAQUEMINES PARISH—		
Tide Water, Manhatten Fruit Co. 3, Venice dome, 26-21s-30e	216	7208
ST. BERNARD PARISH—		
Gulf, Lake Lery 2, Lake Lery prospect, 28-14s-14e	*	6667

*Failures; †Junked; ¶Million cu. ft. gas.

New Sand at Lockport

A new deep sand was discovered on the southeast flank of Lockport field, Section 9-10s-9w, Calcasieu Parish, last week when Magnolia Petroleum Company completed Freiburg & Wolf 6 at 6937 feet flowing 325 barrels of 42 gravity oil at 82 degrees F. through a quarter-inch choke, with a tubing pressure of 400 pounds and a casing pressure 1225 pounds, from Marginulina sands topped at 6917 feet.

Marginulina production has only been found on the southwest side of Lockport field. The deep producing sand is found approximately 3500 feet east of Freiburg & Wolf 6. All producing wells in the area of the deep well are producing from shallow formations.

Seven-inch casing was set in Freiburg & Wolf 6 at 6898 feet and 2½-inch tubing, with screen and liner attached, was hung at 6648 feet. A slight show of oil was encountered in the extension well at 5481 to 5497 feet, but a drill stem test of this sand showed salt water. A slight odor of oil was also logged at 6629 to 6635 feet. An electrical logging device run after the well had been drilled to 6937 feet showed 30 ohms in the producing sand.

The discovery of the new producing sand on the southeast side of Lockport will no doubt lead to a new drilling campaign for the old field such as the drilling campaign which is now being carried on at Jennings, East and West Hackberry and New Iberia fields.

Three New Wildcats

Three new wildcat locations were made in the territory last week. D. & D. Oil Company announced another

location northwest of Starks, where it has already drilled one dry hole. Lutcher Moore 2 is 330 feet south and 330 feet west NEc NW SE of Section 1-8s-13w, Calcasieu Parish. The wildcat is near the Lutcher Moore 1, Section 1-8s-13w, abandoned at 8557 feet after the hole bridged. At 7013 feet the well showed oil and gas in the return ditch and tried to blow out. Also at 8398 feet the well attempted to blow out, and the drill pipe became stuck. After drilling in a new hole a sand and shale showing oil was logged from 8398 feet to 8415 feet, but the drill pipe became stuck.

West of Black Prince Island, St. Charles Parish, where Amerada Petroleum Corporation is drilling a well with Louisiana Land & Exploration Company, the former announced location for South Coast Corporation 1, 1071 feet south and 4624 feet east of the northwest corner of Section 34-15s-19e. The well is in the Raceland area.

On the Henderson salt dome, St. Martin Parish, The Texas Company has made location for its tenth wildcat. St. Martin Land Company 10, 150 feet east and 100 feet south NWc SW¼ of Section 15-8s-7e.

Second Gibson Well Looks Good

The second well at Gibson field, Terrebonne Parish, indicates it will extend the producing limits north. Shell Petroleum Corporation's Realty Operators B-2, Section 18-17s-15e, was running an electrical logging device last week and will set casing down to 9452 feet where the top of the oil sand was logged. The hole was drilled to 9493 feet in sand showing oil.

Another 10,000-foot producing well was indicated at Lafitte field, Jefferson Parish, in The Texas Company's L. L. E. Lafitte 4, a workover. The hole was drilled to 10,092 feet, where an electrical logging device was run. Sand showing oil was cored from 10,077 to 10,083 feet and from 10,088 to 10,090 feet.

East of Tepetate field, Acadia Parish, John Mayo et al's Bank of Commerce & Trust 1, Section 19-7s-1e, may be abandoned at 9008 feet. An electrical logging device is being run. A dry sand encountered in this wildcat at 8551 feet is equivalent to the Ortego sand found at Tepetate. The wildcat topped Heterostegina lime at 7291 feet.

Coastal Minerals Development Company's Purdy Hess 1, Section 25-2n-3e, Avoyelles Parish, logged a gas sand at 4331 feet, or 78 feet below the top of the Cockfield, which was at 4253 feet. Elevation is 45 feet. At the end of the week the crew was drilling ahead below 4458 feet in shale.

On the Hanszen prospect, Cameron Parish, Humble Oil & Refining Company encountered heaving shale in Bell Hanszen 1, Section 5-12s-6w, at 8946 feet, and the company was forced to use 13-pound mud. However, the shale apparently was whipped as at the end of the week the test was drilling below 9061 feet in shale.

On the China prospect, Jefferson Davis Parish, Stanolind Oil & Gas Company was preparing to core for the sand in Calcasieu National Bank B-2, which caused B-1 to blow out. Seven-inch casing was set at 9089 feet.

Commissioner refuses Cotton Valley space change.

* * *

Lodged casing delays test of Petitt sand in Rodessa.

Shreveport.—Testing producing possibilities of the Petitt (basal Glen Rose) on the northeast nose of Rodessa, was delayed last week in Blackwell Oil & Gas Company's Neugent 3, NE SE 8-23n-15w, Caddo Parish, when 5-inch casing being run in the hole lodged at 6170 feet.

This test had a showing of oil in the Petitt and also in the Travis Peak. It was drilled to 7202 feet, logging top of the Travis Peak at 6790 feet, and plugged back to 6750 feet. The Petitt was logged from 6651 to 6720 feet. Elevation is 324 feet.

Deep One Plugs Back

South of the Rodessa fault in Caddo Parish, R. W. Norton's Payne 1, SE SE 27-23n-16w, which penetrated 16 feet into Permian salt and was plugged back from 11,486 feet to 10,600 feet, where it tested a slight showing of oil and gas, has been plugged back to casing seat at 9454 feet preparatory to perforating at 8970 to 9010 feet. A hung drill pipe delayed operations for several days.

Standard of Louisiana's J. W. Farmer 2, NE NW 7-23n-15w, north outpost in the northeast nose of the field, was shut down after electrical tester was run to 6059 feet. With elevation of 307 feet this hole logged the base of massive anhydrite at 5700 feet. In a 15-minute drill stem test through ⅜-inch choke at 5800 to 5818 feet the well showed only a small amount of gas.

Well apparently near limit of Lodi offshoot of Rodessa

Shreveport.—The northern limits of the Lodi offshoot of Rodessa field in Marion County, Texas, apparently were neared in The Hunter Company's Henry W. Fonda 2, A. de los Santos Coy Survey, which was completed as a small producer and showed a small percentage of salt water. It is only 632 feet north of the same company's Fonda 1, the first well in this "spot." The dip between the two wells is said to be 11 feet.

Fonda 2 later went completely "dead" and subsequently was treated with 3000 gallons of acid. Then when opened, it flowed 45 barrels of oil in the first hour and 25 barrels the second hour through ¼-inch tubing choke. Then it ceased to flow again. After this the well was swabbed to within 250 feet of bottom and closed to build up pressure. When opened it averaged 9 barrels hourly through the choke with tubing pressure 200 pounds and casing pressure 215 pounds. It was then free of water. Depth is 6095 feet.

Mid-Continent Gets Good Well

Mid-Continent Petroleum Company's Sory 1, in the same survey, which logged saturated Coquina lime from 6085 to 6096 feet and was completed at 6101 feet after 7-inch casing was cemented at 6058 feet, flowed 463 barrels in 12 hours through ½-inch tubing choke and later through ¼-inch choke averaged 52 barrels per hour. Gas yield was estimated at 250,000 cubic feet. Casing pressure was 1080 pounds and tubing pressure 800 pounds. The company is moving in materials for Sory 2.

The fifth well of this Lodi area to reach the producing horizon is Fohs Oil Company's Mary McReynolds 1, same survey, which cemented casing after coring saturation from 6029 to 6034 feet; elevation is 276 feet. Depth is 6069 feet. It is a south offset to production.

East of Jefferson in the same county, Arkansas - Louisiana Gas Company's Wood 1, J. C. Eaton Survey, was shut down waiting orders after testing dry in the Ozan (Blossom) sand at 2530 feet.

40-acre spacing at Cotton Valley continued

Shreveport. — Following an all-day hearing at Shreveport on July 16, Conservation Commissioner William G. Rankin anounced that for the present the 40-acre space rule in the deep Cotton Valley field, Webster Parish, will be continued.

Ohio Oil Company, Magnolia Petroleum Company, and United Gas Public Service Company had petitioned for a 160-acre space rule for the 8000-foot horizons in the lower Marine of the field. Woodley Petroleum Company, which has two deep wells in the field, and all of the landowners sought to retain the 40-acre rule. H. L. Hunt, independent, joined in the move for the 160-acre rule.

The contention was made that the 8100-foot horizon now producing is a gas field and not an oil field and that should a real oil field be opened around the flanks of the structure they would not urge a 160-acre space rule for the oil field. The present gas-oil ratio is in excess of 12,000 to 1.

Cotton Valley at present has 11 wells

producing from the lower Marine below 8000 feet. Ten of the wells and a recent gauge on each follow:

	Barrels
Magnolia, Cox 5	476
D. G. Cox 2	626
Ohio, Bodcaw 1, Acct. 4	459
R. M. Coyle 1	243
S. P. D. Coyle 1	587
Gray 1, Acct. 2	457
A. J. Hodges 2, off production	...
United Gas, Davis 2	382
Mixon 2	360
Woodley, Gray B-4	472

Ohio Oil Company's R. L. Holloway 6, Section 23-21n-10w, discovery well of the Travis Peak and only producer in that horizon in that field, is making 463 barrels daily.

Lisbon has 53 wells and all are flowing

Shreveport.—The Lisbon oil field of Claiborne and Lincoln parishes, where the first well was completed last Christmas day, up to July 15, 1937, had produced 723,400 barrels of oil from basal Glen Rose lime, and on that date had 53 producing wells. Only one dry hole has been drilled in the field, 2 miles north of present production. The daily average of the 53 wells on July 15 was 247 barrels per well.

With only a few exceptions, all wells completed at Lisbon have used acid either before or after completion, but only one complete pumping unit has been installed in the field and that is used only to agitate and not to lift. This unit is located at J. B. Bond's H. E. Patton 2, Section 36-21n-5w.

The average bottom-hole pressure of the field on May 10 was 1749 pounds; on June 14 it was 1606 pounds; and on July 13 it was 1269 pounds.

Two parts of Lisbon field get quarter mile extension

Shreveport.—Lisbon field was extended a quarter of a mile toward the west in two parts of the area last week by two wells. West of the northwest part of the field Standard Oil Company of Louisiana completed F. B. King 2, center east half NE NE 35-21n-5w, at 5307 feet, flowing 90 barrels of oil the first hour through 20/64-inch choke. West of the discovery well, C. R. Schuster and associates' Patton Estate 2, center south half NW NE 1-20n-5w, was completed after acidizing flowing 40 barrels per hour through ⅝-inch tubing choke.

The largest open flow so far recorded in Lisbon was made last week in Hollyfield & McFarlane's Maggie Patton 2, center west half SW SE 31-21n-4w. It flowed 108 barrels per hour through ⅝-inch choke, or a total of 2604 barrels for 24 hours. Depth is 5289 feet.

Louisiana issues 18 drilling permits

Shreveport.—Eighteen drilling permits were issued last week by the minerals division, Louisiana Conservation Commission. Thirteen were for North Louisiana, divided among the following parishes: Bossier 2; Caddo 6, including 1 for Rodessa; Claiborne 3, all in Lisbon; DeSoto 1; Lincoln 1, for Lisbon. The 5 in South Louisiana were divided among the following parishes: Calcasieu 1; Cameron 2; Iberville 1; St. Martin 1.

ARKANSAS FIELDS

Outpost behavior brightens outlook for Schuler area

El Dorado, Ark.—The picture at Schuler, Union County, where four wells are producing from upper Permian, but where later tests indicated lenticularity of the sands, had a more satisfactory aspect last week.

Slightly over ½ mile southeast of production, Marine Oil Company's Fee 1, Section 17-18-17, had cemented final casing string after getting 4000 feet of oil and 500 feet of water in a 15-minute drill stem test from 5585 to 5614 feet, with ½-inch chokes at top and bottom, with pressure registering 125 pounds. Total depth is 5805 feet. Elevation is 214 feet. The oil is believed coming from a sand below the oil sand and separated from it by shale. It is believed it has been cased off and casing will be perforated.

South Extension Cores Saturation

South of production, Edwin M. Jones' C. H. Murphy 1, Section 19-18-17, logged four feet of saturated sand in a core from 5624 to 5636 feet and is coring ahead. Elevation is 262 feet. However, the same operator's Murphy B-1, Section 13-18-18, showed salt water from 5580 to 5613 feet in a test, and it is coring below 5752 feet.

Deep test planned in Camden area

El Dorado, Ark.—Tide Water Associated Oil Company and Seaboard Oil Corporation plan to spud by August 1 on a geophysical high around which they have a block centering in Section 33-13-18, Ouachita County, just south of the lone producer in the shallow Nacatosh sand field known as Camden, located in Section 25-13-18. This well is still producing 12 to 15 barrels of oil daily, but 6 offsets all failed.

Edwin M. Jones and associates have over 1500 acres just west of this block, and Walter Lown and associates have holdings to the southeast, all of which may be pooled for a deep test.

Tide Water Associated Oil Company and Seaboard Oil Corporation also have a block in Columbia County, centering around Section 24-17-19, which has recently been re-shot by a geophysical unit employed by Standard Oil Company of Louisiana. Since its crew worked this area the latter has been adding to its holdings.

In LaFayette County where it once had large holdings, Ohio Oil Company has shown a renewed interest and has recently leased several hundred acres in Township 16, Ranges 23 and 24. Root Petroleum Company has been doing geophysical work in Miller County east of Texarkana.

Northwest of the shallow Lisbon stripper field in Union County, Don Keever has assembled about 2500 acres around Section 5-17-16, for a proposed deep test.

NORTH LOUISIANA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CLAIBORNE PARISH (Lisbon)—		
Hollyfield & McFarlane, M. Patton 2, 31-21n-4w	2604	5289
Schuster et al, Patton Est. 2, 1-20n-5w	960	5297
Scout Oil Corp., Vaughn 2, 36-21n-5w	456	5282
Standard of La., F. B. King 2, 35-21n-5w	1230	5307
CADDO PARISH (Rodessa)—		
Standard of La., Sarah Kaempfer 4, 9-23n-16w	888	5987
Parker B-1, 9-23n-16w	1176	5970
TENSAS PARISH—		
Ark. La. Gas Co., Hardwood Timber Co. 1, 8-11n-10e	*	3070

*Failures; †Junked; ‡Million cu. ft. gas.

Arkansas issues four permits for new wells

El Dorado, Ark.—Four drilling permits were authorized last week by the Arkansas Board of Conservation, as follows: Columbia County: Standard Oil Company of Louisiana, John P. McKean 1, 660 north and east SWc 8-16-22. Miller County: C. Andrede III, J. O. Gerrald 1, 757 feet east and 445.8 feet south NWc E½ Fractional Section 15-20-28. Pike County: Bruce E. Wallace and W. E. Neill, Tilyou 1, 330 feet north and west SEc SE SE 26-8-24. Union County: Sklar Oil Corporation, M. G. Murphy 1, 330 feet north and west SEc NW SW 24-17-16.

Southwest Mississippi 5000-foot test contract

Jackson, Miss.—Gulf Oil Corporation has completed assembly of another block in southern Mississippi, having secured approximately 10,000 acres in Township 9 north, Range 20 west, Jeff Davis and Simpson counties, near the village of New Hebron. The leases are said to be 10-year term.

A block of acreage centering around Section 1-2n-2w, Wilkinson County, southwest Mississippi, assembled by Dr. C. B. Pennington, has been assigned to H. L. Carnahan, Trustee, of New Orleans, and contract for a 5000-foot test has been given to E. R. Owen, drilling contractor of Jackson.

Phillips Petroleum Company's torsion balance unit checking the 250,000 acres taken under geophysical option in several counties in south Mississippi is working in Jeff Davis County. Sun Oil Company has a torsion balance unit working along the line of Jones and Forest counties. The Texas Company has a seismograph unit working in the area of the newly discovered salt dome in Section 28-4n-15w, Lamar County, and Continental Oil Company has a gravimeter unit working in Marion County near Columbia. Ohio Oil Company recently had a geophysical unit in Holmes County, north Mississippi near Lexington, and Southern Natural Gas Company has a unit working for it in Warren County.

ROCKY MOUNTAIN FIELDS

Lance Creek deep hole testing unnamed horizon.

* * *

Powder Wash extension try missed usual markers.

Casper, Wyo.—One minor completion was reported this week in the Big Medicine Bow field, Carbon County, southern Wyoming, where the joint well of Ohio Oil Company and The California Company, Union Pacific Cronberg 4, CSW SW 25-21n-79w, is making 7,000,000 cubic feet of gas and 125 barrels of distillate per day from the Upper Sundance horizon at 5446 feet. Hole was originally drilled to 5617 feet in a lower member of the Sundance series and encountered water, being plugged back to the upper formation for completion.

The same companies' Union Pacific Cronberg 5, CNW NW 25-21n-79w, is making hole at 1995 feet after cementing 10-inch casing at 1025 feet with 290 sacks and Wm. Kyle 3-A, SW NE 26-21n-79w, is drilling at 2158 feet.

Lance Creek Deep Test

Continental Oil Company's deep test in the southeast part of the Lance Creek field, Niobrara County, continued to hold the spotlight this week as operators tested production in the deep Minnelusa formation at an unnamed depth in Tom Bell 10, CSW NW 34-36n-65w. Plug was drilled early in the week after cementing 7-inch production string on top of the sand. Officials declined to reveal total depth or sand log of the test.

On the eastern side of the Lance Creek field, Ohio Oil Company's deep test, Taylor 2 OPC-32, NWc NW SW 25-35n-65w, has drilled through the Basal Sundance formation without encountering any oil or gas shows and is making hole at 4400 feet in the red beds. This test is headed for the deep Minnelusa horizon opened for commercial production by Leo 5 OPC-16 several weeks ago. Leo 1 OPC-7, NWc NW SE 35-36n-65w, also headed for the Minnelusa, is redrilling at 2430 feet.

Ohio Oil Company's Lamb 10 Account 2, NE SE 5-35n-65w, Sundance well in the Lance Creek field, is drilling at 2350 feet. Another Sundance well in the field, Argo Oil Corporation's Ford 4, SW SE 33-36n-65w, is coring at 4089 feet and considered as very near the objective formation. Continental Oil Company's Otto Rohlff 8, SE SE 31-36n-65w, is drilling at 2264 feet headed for the Sundance production level of the Lance Creek field.

Continental Oil Company's Leach 1, SW NE NE 29-36n-64w, 5 miles east of the proved limits of the Lance Creek field, in what is termed the East Lance Creek area, is still shut down at 2780 feet, fighting caving hole and trying to regain lost circulation.

Ohio Oil Company's Union Pacific-Wister 1, CSW SW 17-22n-79w, drilling as an east extension test of the Allen Lake gas field, south of the town of Medicine Bow, in Carbon County, is running 8¼-inch casing string to bottom at 2045 feet. This is an east offset to Medicine Bow Oil Company's Hintze - Government 1, which extended Allen Lake ¾ of a mile to the east when completed in 1936.

The semi-wildcat test of the Simpson Ridge structure, Carbon County, immediately west of the Big Medicine Bow field, Ohio Oil Company's Union Pacific 1, SWc NW NW 20-21n-80w, is cementing 13⅜-inch casing at 1120 feet, total depth.

Ohio Oil Company's Alba Dixon 8, NE SE 34-20n-78w, deep well in the Rock River field, Carbon County, which is reported milling on pipe in hole at 5409 feet after fishing to recover a lost joint of pipe was unsuccessful. The company's Harrison-Cooper 12, SE SW 35-20n-78w, in the Rock River field, is still a location.

Sinclair-Wyoming Oil Company's Wertz 11-A, SE NW NW 7-26n-89w, in Carbon County, is reaming 9⅝-inch hole to 12½ inches in diameter from 2600 to 2892 feet and will set 10-inch casing at the latter depth; total depth is 3523 feet.

MOUNTAIN STATES
Completions

MONTANA

Company, Well and Location	Init. Prod. Bbls.	Depth
GLACIER COUNTY (Cut Bank Field)—		
Glacier Prod. Co., Connolly 1-A-20, cse ne 30-34n-5w	¶2	2745
P. M. K. Oil Co., Haglund Sr., 3, se nw ne 14-34n-6w	50	3875
TOOLE COUNTY (Kevin-Sunburst Field)—		
A. Beardsley's Swears 7, ne sw nw 9-35n-2w	80	1651
Texas Co., Swears 6, ne sw 9-35n-2w	10	1637
Boyd Kyle et al, Kielbaugh 1, w sw sw 12-37n-1w	*	2372

WYOMING

WESTON COUNTY (Osage Field)—		
H. D. Wiltse, 13, se ne nw 17-46n-63w	*	430
Bert Higgins, 5, cnl nw sw 4-46n-63w	*	300

*Failures; †Junked; ¶Million cu. ft. gas.

In the Muskrat gas field, Fremont County, west central Wyoming, Sinclair-Wyoming Oil Company's Muskrat 2-C, NE SW SW 1-33n-92w, deep test headed for the Tensleep level of the field, is drilling in a very hard lime formation at 7561 feet.

Salt Creek Deep Test

In Natrona County, central Wyoming, Stanolind Oil & Gas Company's Tensleep 10, CNW SE 26-40n-79w, deep test in the old Salt Creek field, is drilling in the red beds at 3982 feet. In the Poison Spider field, Natrona County, Empire State Oil Company's Poison Spider 16, NW SW 12-33n-83w, has drilled plug at 1356 feet and is making water test with hole bottomed at 1420 feet in the Sundance sand.

Kinney-Coastal Oil Company's Government 3, SW NW NE 24-56n-98w, northwest extension test on the Park County side of Garland field, known as the Middle Fault block, is making hole at 4535 feet. It is deepening to the Madison lime from the Tensleep formation in which it found commercial production. Location is 1½ miles northwest of the nearest producing well.

In the Byron field, Big Horn County, northern Wyoming, Ohio Oil Company's Adam Pryde CSW SE 24-56n-97w, is drilling at 4748 feet in a variegated shale formation. Baker-Byron 2, SW NW 23-56n-97w, is drilling in shale at 4037 feet. Work has not yet been started on Ohio Oil Company's Sidon Canal 3, NW SW (lot 40) 24-56n-97w, and Couzzens 2, SE SE (lot 40) 23-56n-97w, new wells for which location has been spotted in the Byron field.

Powder Wash Extension Not Showing

In the Tri-State area the Mountain Fuel Supply Company's J. C. Donnell 1, NE SE 21-12n-97w, on the Powder Wash field, Moffat County, northwestern Colorado, is coring in the lower Wasatch at 5749 feet. This is the northernmost location in the field and to date has encountered no commercial oil or gas shows. Both other wells in the field topped commercial oil production above 5400 feet.

Mountain Fuel Supply Company's Charles Stone 1, SW NW 18-19n-103w, located in the North Baxter Basin field, Sweetwater County, southwestern Wyoming, is coring at 3677 feet.

In Lincoln County, southwestern Wyoming, Place Oil Company is testing production at 1140-51 feet in Davis 1, SE SE SE 9-26n-113w, in the La-Barge field.

In Utah, Mountain Fuel Supply Company's E. S. Lauzer 1, NW NW 27-3n-24e, in the Clay Basin gas field, Daggett County, is coring ahead at 5872 feet in variegated shale. This well tested 14,000,000 cubic feet of gas in the Dakota formation at 5749-5814 feet last week.

Deep test well in the Billy Creek field, Johnson County, northern Wyoming, the Carter Oil Company's Fred Rider 3, CNW 17-48n-82w, has cased off the Sundance formation and is cementing string at 5047 feet in the top of the red beds. It encountered no oil shows in the Sundance and will be drilled ahead to test the possibilities of the Tensleep sands in the field. The Billy Creek field at present produces only gas which is marketed in the towns of Sheridan and Buffalo to the north of the field.

Rosecrans enhanced by second deep sand completion.

* * *

Poor offsets to good El Segundo wells confusing.

Los Angeles. — Rosecrans, a small field of 310 acres discovered in 1924, may take a more important place among California producing areas in the future as a result of completion recently of a second deep sand producer by Union Oil Company, which controls 199 of the proven acres.

The first deep sand producer was Barnsdall Oil Company's O'Dea 10, which produced 700 barrels at 7664 feet. Union Oil Company's Rosecrans 16, depth 7560 feet, had a production of 1205 barrels of 33.2 gravity oil, cut 2.8 percent. In this hole 1000 feet of 16-inch casing, 5759 feet of 9⅝-inch and 7245 feet of 7⅝-inch. The 5¾-inch liner included 272 feet of perforated. Pressure was 140 pounds on the casing and 850 pounds on the tubing (2½ inch), through 55/64-inch bean, and accompanied by 700,000 cubic feet of gas.

Several Hold Tracts

It is doubted if this deep sand underlies all the field, but it is felt it can be tapped under a large part of the total acreage. Several other concerns hold smaller tracts and at latest reports five wells were drilling with the new deep sand as the objective.

Barnsdall Oil Company's O'Dea 16 is drilling at 6350 feet in sand and shale, with 9⅝-inch cemented at 5998 feet. The same company's O'Dea 17 is drilling at 5860 feet, with 13⅜-inch cemented at 1000 feet. Bolsa Chica Oil Corporation's Exeter 3 is drilling at 7850 feet in shale with streaks of oil sand. This test is on the edge and its progress is being watched with much interest. A. N. Macrate is also after the new deep. His Gray 2 is drilling below 5795 feet after cementing 9-inch at 5794 feet. Universal Consolidated Oil Company's Trust 1, with bottom at 7580 feet, has set a plug at 7546 feet, and cemented 6⅝-inch casing at 7430 feet.

El Segundo Spotty

The new El Segundo field near Los Angeles, not far from the Pacific beach, and just west of the Standard Oil Company's big refinery, is still confusing. Offsets to good wells are poor ones. Republic Petroleum Company's El Segundo 8, which was deepened to 7582 feet, had to be placed on the pump and was good for 225 barrels of 26.4 gravity clean oil. This hole was drilled 176 feet into the Schist, not expected to produce oil. Geologists and engineers are wondering just what it's all about. Republic Petroleum Company is preparing to deepen El Segundo 2 below 7477 feet.

Richfield Oil Corporation's El Segundo 6, with bottom at 7538 feet, topped the Schist at 7531 feet, and is coring ahead. Its Elsie 1 is standing with 8⅝-inch cemented at 6950 feet, and its Santa Fe 1, bottom at 7690 feet, is trying to locate water, after cementing 5½-inch at 7640 feet. Standard Oil Company of California's Refinery 1, bottom at 7171 feet, is producing 2125 barrels of 26.5 gravity oil, and location has been made for Refinery 2. Sunset Oil Company ran into trouble at 5890 feet and is fishing. The Texas Company's Security 3 is drilling in shale at 3831 feet, and Security 4 is a foundation. Geo. F. Getty has made locations for El Segundo 1 and Goodwin 1. Ramsey & Wallace has a rig up for No. 1.

Complete Against Pressure

Union Oil Company's first well to be drilled under pressure with oil and gas circulation and special heavy equipment, Callender 55, in Dominguez field, was completed for 178 barrels of 33 gravity oil and 3,900,000 cubic feet of gas through 40/64 inch choke. Pressure was 370 pounds on the tubing and 800 pounds on the casing.

Callender 55 was bottomed at 6700 feet in the seventh producing zone, and a gas well had been expected as the hole is high on the structure in the southeast corner of the Callender lease. Dominguez gas averages from 1½ to 2 gallons of natural gasoline per 1000 cubic feet. In the same field, Union's Callender 50, deep test, has been plugged back to 9605 feet from 10,433 feet, and is preparing for a production test. A northwest outpost well on the Union's Dominguez holdings is to be known as Callender 56 and will be drilled 610 feet west of the last hole drilled. It probably will be a deep test.

CALIFORNIA

Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BELRIDGE—		
Ohio Oil, Hopkins Fee 1	120	800
FRUITVALE—		
Meridian Oil Co, Turner 4	400	3085
KERN FRONT—		
Republic Pet. Co., Strassburger 18	265	1926
Texas Co., Lehman 7	200	2125
KERN RIVER—		
Italo Pet. Corp., Koshland 1	15	1190
LOST HILLS—		
Texas Co., Theta 2-32	160	1226
MIDWAY-SUNSET—		
Merritt-Annex Oil Co., Fried 5	700	2904
Standard, No. 7-13D	340	3585
No. 50-33D	400	2775
TEN SECTION—		
Shell, K.C.L. A-58-29	1850	8366
KETTLEMAN HILLS—		
Kettleman No. Dome. No. 78-28J	1020	8140
GATO RIDGE—		
O. C. Field Gaso. Corp., Continental 2	800	3714
EL CAPITAN—		
Shell, Covarubias 1-26	510	1565
RIO VISTA—		
Amerada, Trignerio 1	¶40	4425
KERN COUNTY—		
Superior Oil-Jergins Trust, Crome Com. 2	*	3637
KINGS COUNTY—		
Birch-Royer Oil Co., Orr 1	*	3145
MONTEREY COUNTY—		
Shell, Branch 1	*	8994
Branch 2	*	8662
VENTURA COUNTY—		
Continental, Casitas 1	*	8018
EAST COYOTE—		
Union, Hale 20	30	4098
EL SEGUNDO—		
Republic Pet. Corp. No. 8	250	7582
Ohio Oil, Gough 4	485	7196
Gough 5	1535	7357
HUNTINGTON BEACH—		
Orco Oil Co., H.B. 1	350	5389
PLAYA DEL REY—		
Union, Del Rey 18	185	6042
MONTEBELLO—		
Richfield, Estrada 1	75	5657
Union, Rosecrans 16	1205	7560
SANTA FE SPRINGS—		
General Pet. Corp. No. 27	120	4796
WILMINGTON—		
General Pet. Corp. Ford 10	3825	4115
Ford 14	1800	3200
Isco A-2	135	3650
Terminal 5	430	3600
F. C. Hall, No. 15-8-1	425	3640
Olympic Ref. Co., Fee 4	150	3540
Pacific Western, Patten 3	200	2930
Royalty Service Corp., Durand 1	285	3610
Oilar 1	725	3625
No. 25-8-1	215	3305
Union Pacific Ry. Co., Offset 33	1200	3228
Offset C-1	295	3532
YORBA LINDA—		
Richfield Cons. Oil Co., Todd 1	125	1760

*Failures; †Junked; ¶Million cu. ft. gas.

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Nine wells are actively drilling in the new Santa Maria Valley field in Santa Barbara County, and 11 operators are either drilling or getting ready to drill. This field was formerly known as Adam field, or area, and was discovered by Union Oil Company, which has extensive holdings in the old Santa Maria field, named after the town. The latest concern to announce the start of operations in the field is California Lands, Incorporated. This is a subsidiary of the Bank of America and was formed to handle lands for the parent company. California Lands, Incorporated, has create dan oil and gas department and secured the services of Frank Jones to head the new department. Jones for some years was with Standard Oil Company, later with Bell-Loffland, Ltd., and more recently was manager of Kettleman Middle Dome Association. He will be assisted by A. G. Melville, as chief geologist. Melville was formerly employed by Prairie Oil & Gas Company, and for several years was acting chief geologist for Chanslor-Canfield-Midway Oil Company.

The company controls in excess of 325,000 acres scattered over the state, some of which is considered potential oil land, and it also holds some acreage now producing or already proven. It has 750 acres in the general Santa Maria Valley area, and also owns an 80-acre tract which is productive. It is understood that drilling operations will start as soon as arrangements can be made.

Deep Test Fishing

In the Rio Bravo area in Kern County, Union Oil Company's Kernco 1-34, Section 34-28-25, stuck the drill pipe with bottom of hole at 10,310 feet and is fishing. This hole picked up an oil sand at 10,269 feet and the oil sand continued to bottom. Last casing cemented was 13⅜-inch at 1143 feet.

In the old Mount Poso field in Kern County, late completions are producing from 200 to 400 barrels a day from comparatively shallow depths. Ring-Vedder's Bowles 29-3, Section 29-26-28, bottom at 1760 feet, is pumping 250 barrels a day, and it is expected when pump strokes are increased it will be good for 400 barrels. It is making very little sand.

Activity at Wilmington, near Long Beach, continues to lead all fields of the state. During the past week, 12 new wells were completed for a total of 8685 barrels flush production. General Petroleum Corporation's Ford 10, on the Ford Motor Company property, has been completed for a larger output than any other well so far completed in the field. It made 3825 barrels of 25.6 gravity clean oil, with bottom at 4115 feet. The completion of this large producer in the 4000-foot sand probably will cause other operators to drill new holes deeper. The flow is through 730 feet of perforated pipe. Tubing pressure was 320 pounds and the casing pressure, 750 pounds.

Most of the recent completions are from the 3600-foot level, but it has already been proved there are two other oil sands underlying much of the field below the 3600-foot level. The last zone so far proved was picked up around 5000 feet in a well drilled early in the life of the field by General Petroleum Corporation, discoverer of the field.

EASTERN FIELDS

Large gas well is completed in Oriskany field.

* * *

32 tests active in New York-Pennsylvania gas field.

* * *

Wiser test may extend Clay Township field north.

Pittsburgh. — United Carbon Company completed E. M. Burdette 1 on Grapevine Creek, Poca district, in the Oriskany field of Kanawha County, West Virginia, at 4983 feet, as a 13,000,000-cubic-foot gas well for the best of two completions in that field last week. It was shut in to be connected with the company's pick-up line in two weeks. S. H. Cart was the drilling contractor.

Second completion was by the United Fuel Gas Company on the C. B. Graham farm, Elk district, same county, bottomed at 5134 feet and showing for 4,330,000 cubic feet a day. Top of the Oriskany was at 5130, with gas at 5131-34 feet.

37 Tests Drilling

Thirty-seven tests are drilling in the field, comprising parts of four districts, with rigs standing for 14 others. An additional 22 locations have been staked. Most of the activity is in Poca and Elk districts, with a few tests drilling in Malden and Union districts. Development trend in the field, which comprises about 50 square miles, is to the southwest, and possibilities are that it may be extended well beyond its present boundaries.

Next tests expected to reach the completion stage are the W. D. Lewis 16, Malden district, by Columbian Carbon Company, which topped the Corniferous lime at 4588 feet, and this company's tests on the Samuel G. Jones and Octavia Pauley tracts, in Elk district. The Corniferous was topped at 4964 feet on the Jones test and at 4901 on the Pauley test. South Penn Oil Company is drilling through the Corniferous on the T. H. Newhouse farm, Poca district.

21 Permits for Oriskany

Indicative of the activity to take place in this field during the coming weeks was the June report of the oil and gas division of the West Virginia Department of Mines which shows 21 drilling permits issued, 3 of which are for deepening operations. During May, 17 permits were issued in this field.

New locations announced in this field during the past week were: Godfrey L. Cabot, Inc., on the Humphreys-Morton lease, on the B. M. Dulany farm and on the Katherine B. Jarrett farm, all in Poca district; United Fuel Gas Company on the J. C. and Aubrey Ray farm, Poca district; United Carbon Company on the Harrison Miller farm, Poca district; Sparton Gas Company and the West Virginia Gas Company on the Louisiana Legg farm, Poca district.

Operations in the deep sand gas field of New York-Pennsylvania increased to 32 during the week, with two new operations started. Pennsylvania Power & Light Company will drill a test on the G. M. Whiteman farm, Harrison Township, Potter County, on the Pennsylvania side of the field, and Clancy et al are moving in material for a test on the Bates farm, Woodhull Township, Steuben County, on the New York side.

Three Nearing Completion

Three Potter County tests of Potter Development Company are nearing completion: cleaning out at 5100 feet on the Crawford farm, Keating Township, and at 5162 feet on the Ida Scoville farm, Harrison Township, and drilling at 4995 feet on the May C. Haupt farm, West Branch Township. New York State Natural Gas Company's test on the Leland Schofield farm, Harrison Township, passed the Tully lime at 4393-4447 feet and was drilling below 4620 feet as the week closed. Other Potter County operations are by Godfrey L. Cabot, Inc., drilling at 920 feet on the A. Bean farm, Harrison Township, and shut down at 850 feet on the Rufus Johnson farm, Bingham Township; by French et al drilling at 2710 on the George Burd farm, Allegany Township, and by Penn-York Gas Company drilling at 1925 feet on the Maude Reynolds farm, Harrison Township.

Cunningham Natural Gas Company has the deepest drilling test on the New York side of the field on the H. Hotchkiss farm, Randolph Township, Cattaraugus County, now drilling below 4690 feet. Southwestern Development Company is not far behind with its test on the Federal Land Bank farm, Dix Township, Schuyler County, which is now below 4100 feet. Belmont Quadrangle Drilling Company is running casing to 4690 feet on the

Clara Lynch farm, Jasper Township, Steuben County.

Ohio Well Makes 225 Barrels

Preston Oil Company completed the largest producer of the week in Sunday Creek Coal Company 1640, Section 35, Coal Township, Perry County, Southeast Ohio. It was completed at 3519 feet in the Clinton sand and produced 225 barrels the first 24 hours after a shot. Zasing et al had a 125-barrel well in Eli Rosenberger 4, completed below the Trenton sand at 1498 feet. The sand was at 1490-95 feet, with gas pressure of 125,000 cubic feet. Location is Section 25, Liberty Township, Seneca County.

The 150-barrel well of J. C. Ellis, No. 17 on the Link Richards tract, Easton district, Hancock County, topped Kentucky completions of the week. It was bottomed in the Jett sand. Six producers, 1 gas well and 3 failures comprised the Kentucky completion record.

Extension Looms

Wiser Oil Company encountered a showing of oil on its test on the Damon Smith farm, SW SE NE, Section 28, Township 3 north, Range 8 east, Clay Township, Clay County, Illinois, at 2635 feet. Sand is the same as encountered at Pure Oil Company's Weiler 1, discovery well in this field, and the test will be deepened to the 2960-foot level, from which Pure Oil Company's Bunny Travis 1 and Sarah M. Bechtel 1 are flowing approximately 1300 barrels a day. Yield at the Weiler well is about 40 barrels a day. Commercial production at the Smith test will extend the proven area of the field north.

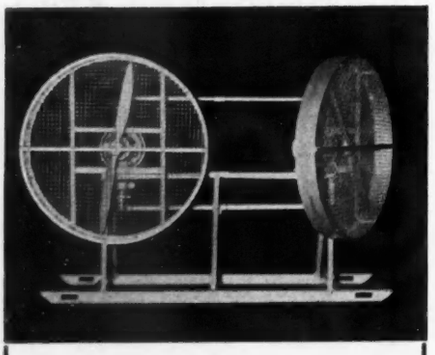
Pure Oil Company was drilling below 3160 feet on B. W. Mosely 1, NW NE NE Section 4-2n-8e; below 2900 feet on both Nick Mosely 1, SE SW NE Section 33-3n-8e, and Albert Travis 1, SE NE NW Section 33-3n-8e, and setting casing in Sarah M. Bechtel 2, SW SW NE Section 33-3n-8e, shut down at 2910 feet and believed to be at the top of the heavy producing McClosky sand. All are in Clay Township, Clay County.

Ohio Oil Company's test on the Charles Palmer farm, Richland County, was drilling below 1700 feet. It is the only Richland County test being drilled by a major company and should reach the pay in a week or 10 days.

Leasing in Williamson County

Williamson County, which has produced almost as much coal as any county in the United States, but has never had a successful oil well, is the scene of increasing lease activity. About 15,000 acres have been leased in this southern Illinois county, with the Superior Oil Company and the Industrial Oil & Gas Company the major holders.

A drilling program in Lake Erie was forecast when Frank P. Fisher, engineering expert engaged by the city of Cleveland to make a survey of possible gas supplies for a proposed municipal gas plant, said an unlimited gas supply could be obtained from the bottom of the lake. He advised the city to start test drilling in Lake Erie immediately.



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West Virginia issues 116 drilling permits in June

Charleston, W. Va.—Drilling permits issued in West Virginia during June totaled 116, a gain of 15 over the previous month and a gain of 41 percent over the 82 issued during June, 1936, according to N. P. Rhinehart, chief of the Department of Mines.

Permits issued by counties follow: Boone 5, Braxton 1, Brooke 1, Cabel 4, Calhoun 16, Fayette 1, Gilmer 10, Jackson 2, Kanawha 23, Lewis 2, Lincoln 5, Marion 3, Marshall 2, Mason 1, Monongalia 3, Pleasants 3, Putnam 2, Ritchie 7, Roane 6, Tyler 5, Upshur 3, Wayne 2, Wetzel 4, Wirt 4, Wood 1.

EASTERN FIELDS
Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
KENTUCKY		
HANCOCK COUNTY—		
J. C. Ellis, Link Richards 17	150	....
W. E. Hupp, Emma Falls 5	50	....
O. D. Vickers et al, Mrs. M. O. Brown 4	40	540
Sands Petroleum Co., W. F. Burk 22	5	....
Moss Oil Co., Mrs. Nora Richards 2	¶.23	504
McLEAN COUNTY—		
Hoosier Drilling Co., J. T. Hayden 1	*	1600
MUHLENBERG COUNTY—		
A. Corbitt, Tell Robinson 1	*	1002
OHIO COUNTY—		
Carpenter et al, Hardin Heirs 5	40	1152
Nollem O&G Co., B. Lloyd 1	15	....
DeHart et al, A. Smith 1	*	675
PENNSYLVANIA		
ALLEGHENY COUNTY—		
O. Miller, Kauffman 1	*	....
BEAVER COUNTY—		
South Penn Oil Co., Wm. Taylor 15	1	....
GREENE COUNTY—		
H. D. Freeland et al, D. L. Freeland 3	15	2996
Cochran & Cochran, Strope Heirs 6	10	3336
WASHINGTON COUNTY—		
R. M. Duden et al, J. E. Johnson 2	¶.04	2750
Wm. Smith et al, W. Donaldson 1	*	2620
OHIO		
ASHLAND COUNTY—		
Ohio Fuel Gas, Walter Strang 1	¶1.87	2863
ATHENS COUNTY—		
William Bros., Grace Leslie 3	¶.20	781
GUERNSEY COUNTY—		
M. J. Purdy, J. D. Carter 3	¶.07	1720
HURON COUNTY—		
A. C. Leathers & Co., Charles Blatt 1	¶	865
L. M. Chapin 1	¶.24	844
LORAIN COUNTY—		
Ohio Fuel Gas, Anthony Forthofer 1	¶1.10	4075
MEIGS COUNTY—		
J. I. Clark et al, Schuyler S. Bush 4	¶.20	1985
T. J. Chase, E. F. Harrison 2	¶.15	795
Meigs Developing Co., Frank A. Ross 2	¶.10	....
Rou Holmes, M. C. Gandee 1	*	2100
Joe Rubin, Philip Heilman 2	*	....
MONROE COUNTY—		
Stout & Shafer, F. Starkey 4	¶.13	2270
MORGAN COUNTY—		
Charles Bowman, H. R. Greathouse 1	¶.60	742
Hopewell Gas & Fuel Co., Elizabeth Floyd 5	*	4140
MUSKINGUM COUNTY—		
Wilbur Swingle, Ernest Epply 3	*	4150
Hope Construction & Refining Co., Joe Varner 8	*	3225
NOBLE COUNTY—		
Lowe & Spangler, W. T. Perry 8	*	249
PERRY COUNTY—		
Preston Oil Co., Sunday Creek Coal Co. 1640	225	3519
SENECA COUNTY—		
Zasing et al, Eli Rosenberger 4	125	1498
STARK COUNTY—		
Obermiller & Co., C. & F. Bremmap 1	¶.96	4073
East Ohio Gas, Mary Killinger 1	¶.38	4175
WASHINGTON COUNTY—		
Hall & Henning, J. W. Pryor 5	6	1625
Earl Montgomery et al, Jacob Gross	1	1160
Best Run Oil & Gas Co., Anthony Schwartz 2	¶.14	979
Graham & Rinard, A. D. Heddleston 1	*	1803
WEST VIRGINIA		
BOONE COUNTY—		
Owens Illinois Glass Co., Jacob Chambers 4	¶.34	1985
Little Coal Land Co. 16	¶.29	1933
Peytona Coal Land Co. 31	¶.25	4783
V. G. Vandeline 2	¶.14	2118
BRAXTON COUNTY—		
Pittsburgh & W. Va. Gas Co., Parkersburg Mills Co. 7595	¶.09	2650
Parkersburg Mills Co. 7597	*	2665
CALHOUN COUNTY—		
Godfrey L. Cabot, Inc., Allen Hardman 10	¶.74	2017
CLAY COUNTY—		
Virginia G&O Corp., Brown et al 41	4	1857
GILMER COUNTY—		
Carnegie Nat. Gas Co., Floyd & Allen 3	¶.80	1245
Floyd & Allen 4	¶.50	1237
McCall Drlg. Co., Rogers Bros. 1	*	1827
KANAWHA COUNTY—		
United Carbon Co., E. M. Burdette 1	¶13	4983
United Fuel Gas Co., C. B. Graham 4706	¶4.33	5134
Pure Oil Co., Williams Coal Co. 271	¶.39	3007
LINCOLN COUNTY—		
Abbott Gas Co., J. C. Abbott 1	*	3745
MARION COUNTY—		
Victor O&G Co., E. H. Talkington 1	¶.33	2415
Hope Nat. Gas Co., E. C. Morgan 7739	¶.15	2766
PLEASANTS COUNTY—		
F. R. Ball et al, W. A. McCush 1	*	2020
PUTNAM COUNTY—		
Hand & Smith, Nitro Industrial Corp. 1	¶.08	4358
RITCHIE COUNTY—		
Underwood O&G Co., K. Underwood 2	¶.80	1820
ROANE COUNTY—		
Henderson Oil Co., E. S. Ball 3	3	1829
TYLER COUNTY—		
S. J. McIntyre et al, A. Matthews 2	1	2235
WAYNE COUNTY—		
Huffman & York, Maggie Patten 1	5	2160
WOOD COUNTY—		
Albert Congdon et al, Charles Grant 7	8	2220

*Failures; †Junked; ¶Million cu. ft. gas.

MICHIGAN FIELDS

Three Buckeye extensions are producers

* * *

Arenac County wildcat makes pumper

Mt. Pleasant, Mich.—Three successfully completed extension tests in the Buckeye district, Gladwin County, featured developments in Michigan for the week, while a 40-barrel pumper in the Traverse limestone, Arenac County, signified possibilities of a new pool in north-central Michigan.

As the Buckeye pool was being pushed east a half-mile, northwest a half-mile and equal distance due west, the South Buckeye field was limited by a series of failures in the Dundee, major productive horizon of the field.

Mammoth Producing & Refining Company's Woods 1, SE NE SE, Section 4-18n-1w, a half-mile northwest of production and two miles from the pool discovery, averaged 24 barrels hourly on a 5-hour test following a 1000-gallon shot of acid at 3661 feet. Natural the test produced 184 barrels the first 24 hours.

D. F. Jone's Bonnigot 1, NE NW SW Section 10-18n-1w, initialed 70 barrels an hour from Dundee lime at 3639 feet, eight feet in pay, for an important west extension. The two tests prove about 500 acres held by Sun Oil Company.

T. F. Caldwell, Inc.'s Emmott 1, Section 12, Buckeye township, with an initial of 850 barrels natural at 3616 feet, pushed the eastern boundary a half-mile and close to the Hay township line.

Failures were scored on the southeastern flank of the South-Oard pool and two failures between the north and south pools appeared to definitely isolate the two productive areas from being one major pool.

Wildcat Produces

E. H. Linaberry's McTaggart 1, Section 26-19n-3e, Adams Township, Arenac County, a wildcat, was completed in Traverse lime for a 40-barrel pumper, with three new starts this week for the area. It is nine miles south and six miles west of the Clayton pool in the same county.

Salem pool, Allegan County, in southwestern Michigan, also was slowed up by four flank tests which failed to show commercially in the Traverse lime, productive horizon of the pool. Operators may deepen for lower formation tests.

Buckeye Production Slumps

Michigan averaged 42,342 barrels crude oil production daily in June, an increase of 84 barrels daily over May, according to the Oil and Gas Association of Michigan.

The most important feature revealed by the June production statistics was the slump in the Buckeye field runs. Buckeye averaged 12,794 barrels in June as compared to 16,280 barrels in May. On this basis, Buckeye averaged less than 100 barrels production per well. The field has a potential, according to the last tabulation of the Buckeye Producer's committee of 90,000 barrels daily from 150 wells.

O. H. White, umpire, said runs had been stepped up to 161 barrels average per well early in July, and that new markets being opened by buyers in the field might result in a 200-barrel average at the end of July.

The McClanahan-Leonard Pipe Line Company, entered the field on July 1, and is handling about 4600 barrels daily.

MICHIGAN
Completions

Company, Well and Location	Init. Prod. Bbbls.	Depth
ALLEGAN COUNTY—		
Devonian Oil, Goodman 1, se se sw 16-4n-13w	500	1589
Muskegon Oil, Moomey 4, se ne se 17-4n-13w	200	1600
ARENAC COUNTY—		
E. H. Linaberry, McTaggart 1, se ne se 26-19n-3e	40	2045
Weber Oil, Berry 1, ne se sw 4-20n-4e	1200	2411
C. & M. Securities, Lemmar 1, sw sw sw 2-20n-4e	*	2689
Devonian Oil, Peavy 2, nw sw se 4-20n-4e	2000	2411
Gordon Oil, Crandall 3, nw ne se 10-20n-4e	185	2434
GLADWIN COUNTY—		
Sun, Reynolds 1, ne se se 23-17n-2w	*	3953
Rabb 4, se sw ne 10-18n-1w	2600	3651
Phillips Oil, Woodward 1, nw nw nw 9-17n-1e	*	3764
Wicklund Development Co., State K4, nw sw se 3-18n-1w	200	3654
State D3, nw ne ne 11-18n-1w	150	3640
State D4, ne ne ne 11-18n-1w	175	3647
State C4, nw sw nw 12-18n-1w	240	3640
State E1, ne nw sw 12-18n-1w	200	3630
Mammoth Producing & Ref. Wood 1, se ne se 4-18n-1w	210	3661
D. F. Jones, Bonnigot 1, ne nw sw 10-18n-1w	1400	3629
C. W. Teater, Dokomos 2, nw sw nw 11-18n-1w	1400	3625
T. F. Caldwell, Inc.'s Emmott 1, nw se se 12-18n-1w	850	3616
H. H. Hart, Soldon 1, sw ne se 12-18n-1w	165	3620
F. O. Whitelow, Tubbs 1, nw nw se 13-18n-1w	*	3687
Smith Petroleum Co., Brenner 3, se se nw 14-18n-1w	100	2813
Archie M. Henry, DeMutch 1, se sw sw 22-18n-1w	*	3676
E. S. Beaver, Armstrong 1, se se nw 23-18n-1w	*	3650
Rex Oil & Gas Co., Foster 1, nw sw se 26-18n-1w	50	3599
Swanson Oil Co., Fritzwater 1, sw ne se 26-18n-1w	100	3537
Naumes & Voorhee, Santa 1, se ne sw 35-18n-1w	110	3600
HILLSDALE COUNTY—		
Jacob Beck, Fee 2, se nw sw 15-6s-3w	*	4275
ISABELLA COUNTY—		
Pure Oil, Embry 3, sec 33-34 line 15n-6w	550	3656
Ryckman 5, nw se ne 33-15n-6w	400	3657
SAGINAW COUNTY—		
Mid-West Oil Co.'s Shields 1, ne nw sw 5-11n-2e	18	2118

*Failures; †Junked; ¶Million cu. ft. gas.

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IMPORTANT WILDCAT TESTS

ALABAMA

CHOCTAW COUNTY—Joe Modisett et al's McCorvey 1, se sw sw 20-9n-2w, dr 350 ft.

GREENE COUNTY — Greene County Oil Dev. Co.'s R. C. Lett 2, se nw 6-21n-2e, sd 115 ft.

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 2, nw sw 9-3n-29e, sd 4975 ft.

MOBILE COUNTY—Grand Bayou O&G Co.'s J. A. Stafford 1, sw sw 24-7s-3w, lcn.

ARKANSAS

ASHLEY COUNTY — Phillips Pet. Co.'s Stillions Lbr. Co. 1, s½ sw nw 18-17-9, 13⅜ in csg 1153 ft, dr 2365 ft, shale and shells.

CLEVELAND COUNTY—J. R. Lockhart's Hernsberger 1, se ne 16-11-13, dk.

COLUMBIA COUNTY—Robt. Keen's Runyon 1, 1-16-21, woc 13⅜ in csg 90 ft. Standard of La.'s McKean 1, sw sw 8-16-22, rur.

HEMPSTEAD COUNTY—Easton, May & Murdock's La Grone 1, ne ne 5-12-26, woc 131 ft. Davidson & Todd's Smith 1, sw se 1-11-25, sd 1940 ft shale.

HOWARD COUNTY—Boettsher O&G Co.'s Griffin-Tyson 1, nw nw 28-11-27, top Pennsylvanian 2185 ft, dr 2598 ft.

LINCOLN COUNTY—Fitzwater et al's V. Bowens 1, nw sw ne 26-9-6, 10-in csg 20 ft.

LONOKE COUNTY—Frank Silver's Chambers Est. 2, 17-2-7, cored sand so 1495-1500 ft, arr run tester, td 1500 ft. Al Demurs' High 1, 25-1-9, sd 512 ft. Jas. E. Russell's Gunter 1, 17-5-10, dk.

MADISON COUNTY—J. E. & Jno. Handy's Hamlin 1, sw nw se 8-16n-26w, mim.

MONROE COUNTY—J. H. Coker's McClane 1, c ne nw 15-4n-2w, rur.

MILLER COUNTY—Holcomb & Thomasson's Embree Hrs. 1, 11-20-28, arr pb and test Gloyd, old td 6514 ft. McClanahan et al's Capps 2, swc 11-20-28, dr 1685 ft; Capps 3, 11-20-28, spd woc surf csg. F. W. Burford's Capps 1, c E-40-ac 14-20-28, dr 4150 ft; J. O. Gerald B-1, nec 15-20-28, dr 4578 ft; J. E. Eason 1, w½ se 11-20-28, dr 3586 ft; J. E. Eason 2, dr 4080 ft. W. M. Layton's Terry 1, nwc 14-20-28, dr 4126 ft. Robert Bros.' Capps 1, 10-20-28, dr 1720 ft. Roger Lacy's Grogan 1, 15-20-28, dk. H. L. Hunt's Womack 1, 10-20-28, rur.

OUACHITA COUNTY — Copenhaver Oil Corp.'s Evans 1, 20-11-19, sd 910 ft.

PIKE COUNTY—Beckwith et al's Hendricks 1, c nw sw 16-8s-25w, claim so 164-66 ft, sd 312 ft. Wallace & Neill's Tilyou 1, se se 26-8s-24w, mim.

ST. FRANCIS COUNTY—Manning & Martin's Gregg 1, ne sw nw 20-5n-5e, dr 1540 ft.

UNION COUNTY—Ark. Southern Oil Co.'s Simmons 1, 15-18-13, Nacatosh sand 2276-80 ft, so, woc 7-in csg 2246 ft, td 2281 ft. W. D. Wingfield's Southern Kraft 1, sw ne 18-16-14, elev 124 ft, sd 3526 ft. I. J. Langley's K. K. Langley 1, nw se ne 1-19-18, mim.

CALIFORNIA

FRESNO COUNTY

CANTUA—Western Gulf Oil Co.'s Skelley Est. 1, 32-16-15, dr sand and shale 4850 ft.

KERN COUNTY

DEVIL'S DEN—Amerada Pet. Corp.'s Beer 4, 17-26-19, td 2670 ft, pumping 10 bbls 25 gravity clean oil. Den Pet. Co.'s Bates 1, 20-25-19, td 4286 ft, wocs 9 in at 3595 ft. Geo. Goodrum's Baron 1, 24-25-18, sd 320 ft. Lube Oil Co.'s No. 1, 25-25-18, td 4280 ft, to deepen.

CARRISA PLAINS—Anchor Oil Co.'s No. 1, 31-31-22, grade only, will drop from report. Eocene Oil Co.'s No. 1, 31-31-22, rig, will drop from report.

LERDO—Arkelo Pet. Co.'s No. 41, 23-28-26, td 10,056 ft, plug 7400 ft, fsh dr pipe.

BENA—Bacal Oil Corp.'s No. 1, 5-30-30, sd 1790 ft. Cajalco Pet. Co.'s Brown-Palletti 1, 9-30-30, td 3570 ft in schist, sd.

RED MOUNTAIN—Calif. Western Oil Co.'s No. 3, 12-28-28, rig. Freemont Oil Co.'s Olcese 1, 26-28-29, rur. Rudolph Pageman's No. 1, 10-28-29, rig. Pebble Beach Oil Co.'s Olcese 1, 16-28-29, rur.

KERN FRONT—C.C.M. Oil Co.'s Carter 1, 7-27-27, dr silty shale 5102 ft.

JASMINE—Doyle Pet. Corp.'s Quinn 1, 15-25-27, td 2956 ft, co.

EDISON—East Edison Oil Co.'s No. 1, 23-30-30, sd 1890 ft.

WASCO—Continental Oil Co.'s K.C.L. A-2, 8-27-24, dr shale 6920 ft. Seaboard Oil-Tide Water Oil Co.'s K.C.L. C-1, 26-27-24, sd 10,213 ft.

ROSEDALE—Continental Oil Co.'s K.C.L. B-1, 12-29-26, sd 10,000 ft in shale, rep. draw works.

ARWIN—General Pet. Corp.'s Arvin 2, 27-31-29, lcn.

PREMIER—General Pet. Corp.'s Umbsen 1, 36-27-26, dr 3934 ft.

NO. KERN RIVER—Hub Oil Co.'s No. 1, 8-28-28, sd 3320 ft.

KERN RIVER—Ray Luse's McNeil 1, 10-28-28, dr shale 2000 ft.

SAN EMIDIO—Kern Leasing Co.'s No. 2, 14-10-23, sd 310 ft. Union Oil Co.'s Morrison 1, 31-11-22, td 2075 ft, wocs 6⅝-in at 1787 ft, showings 1790 to 2070 ft.

GRAPEVINE—Ohio Oil Co.'s Title Ins. D-1, 21-11-19, td 9652 ft, plug 6662 ft,sd 9652 ft, plug 6662 ft, underreamed, filled hole with gravel, rotated liner to top of plug. Ran swab, sanded up, pulling liner and to co. Reserve Oil & Gas Co.'s No. 33-4, 33-11-19, td 5444 ft, plug 4541 ft, sd. Wilshire Oil Co.'s Tejon 1, 5-10-19, td 4650 ft, r.

ELK HILLS—Richfield Oil Corp.'s Buena Vista 1, 7-31-25, grading.

TEN SECTION—Shell Oil Co.'s Canal 21-14, 14-30-25, td 8613 ft, 7 in at 8275 ft, ran tubing, swabbing.

FRUITVALE—Shell Oil Co.'s Bellevue 9-36-31, 31-29-27, dr gray sand 6708 ft.

ROUND MOUNTAIN—J. J. Tavis' Olcese-Tavis 1, 4-29-29, dr 500 ft.

McGUNDEN—Superior Oil-Jergins Trust's Crome Com. 2, 36-29-28, td 3637 ft, in gray sand, abn.

MOUNTAIN VIEW—Union Oil Standard Oil's Barbelty 1, 1-30-28, lcn.

RIO BRAVO—Union Oil Co.'s Kernco 1-34, 34-28-25, dr brown shale 10,264 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

*—*dry hole abandoned well.*
‡—*salt water (completions).*
†—*junked and abandoned.*
¶—*million feet of gas.*
abd—*abandoned.*
bbls—*barrels.*
br—*building rig.*
b.s.—*basic sediment.*
csg—*casing.*
co—*cleaning out.*
dd—*drilling deeper.*
dk—*derrick.*
dr—*drilling.*
fsg—*fishing.*
ft—*feet.*
hfw—*hole full of water.*
in—*inches.*
lcn—*location.*
m—*milling.*
mim—*moving in materials.*
mit—*moving in tools.*
mot—*milling on tools.*
n, s, e, w—*north, south, east, west.*
oih—*oil in hole.*
owdd—*old well drilling deeper.*
owpb—*old well plugging back.*
pb—*plugged back or plugging back.*
r—*reaming.*
rog—*rig on the ground.*
rur—*rigging up rotary tools.*
rust—*rigging up standard tools.*
sd—*shut down.*
sdtr—*sidetracking.*
sg—*show gas.*
si—*shut in.*
so—*show oil.*
so&g—*show oil and gas.*
spd—*spudding.*
sr—*straight reaming.*
sw—*salt water.*
td—*total depth.*
ur—*underreaming.*
wih—*water in the hole.*
wo—*workover.*
wocs—*waiting on cement to set.*
wosr—*waiting on standard rig.*

MISCELLANEOUS

HUMBOLDT COUNTY—Texas Co.'s Eureka 2, 22-3-1, td 7708 ft, fsh core bbl.

KINGS COUNTY—Birch-Royer Oil Co.'s Wm. Orr 1, 5-23-17, td 3145 ft, in gray sand, abn. Central Calif. Utilities' Kettleman-Lakeview 3, 11-23-19, sd 1202 ft. Dudley Ridge Dev. Co.'s No. 2, 24-23-20, dr shale 1400 ft. Kettleman View Oil & Gas Co's No. 1, 9-22-19, sd 4787 ft. Glen C. Stone's Teeter 1, 25-20-20, sd 1315 ft. Tri-Counties Oil Co.'s Olson 1, 10-23-22, dr shale 5100 ft.

MADERA COUNTY—Tide Water Associated's Gill 1, 27-12-15, lcn.

SAN JOAQUIN COUNTY — Standard's Woods 1, 24-1-5, dr shale and gray sand 6374 ft. Texas Co.'s Lawrence-Stephens 1, 8-1-6, dr sandy shale 4690 ft.

SOLANO COUNTY—Amerada Pet. Co.'s J. C. Hamilton 1, 24-4-2, dr hard sand 4050 ft, gas well, shutin; Marks 2, td 4475 ft, gas well, shutin. Coast Explor. Co.'s No. K-2-1, 30-4-9, dr sand and shale 5832 ft.

SUTTER COUNTY—Buttes Oil Fields' No. 4, 2-15-1, td 5850 ft, recovered fsh, to dr ahead.

TULARE COUNTY—Amalgamated Oil & Gas Corp.'s A. O. G. 3, 29-24-24, rig. E. P. Jenning's No. 1, 4-24-23, sd 2707 ft; No. 2, 33-23-23, rig. New Deal Oil Co.'s Glass 1, 17-21-23, rur. Standard's Morris 1, 36-24-23, rur. L. E. Turner's Glaze 1, 15-22-26, td 2902 ft, in shale streaks sand, fair cut, formation tester recovered gas cut mud, trace oil.

YOLE COUNTY—Empire Oil & Gas Co.'s No. 1, 8-9-3, lcn. Standard's Hooper 1, 32-9-1, dr shale 1850 ft, started coring 1500 ft.

MONTEREY COUNTY—Amil A. Anderson's Hillman 1, 15-24-14, dr shale 1150 ft. Calif. Oils' No. 1, 33-23-15, td 3500 ft, bailing. Shell Oil Co.'s Branch 1, 34-24-10, td 8994 ft, abn; Branch 2, 34-24-10, td 8662 ft, plug 8045 ft, abn.

SAN LUIS OBISPO COUNTY—Burkholder Oil Corp.'s Clay 1, 14-10-26, sd 3252 ft. A. O. Lewis' Pechal 1, 34-30-10, td 2750 ft, bailing. Temblor Oil Co.'s No. 1, 22-31-21, dr shale 2330 ft. Vanguard Oil Co.'s Clark 1, 26-27-14, rig.

SANTA BARBARA COUNTY—E. C. Arnold's Arnold-Apache 1, 8-8-33, td 5450 ft, top Monterey 4920 ft, to set pipe. Hancock Oil Co.'s Los Alamos 2, 6-7-32, dr gray shale 3890 ft. Leora Oil Co.'s Tithian 1, 8-4-25, sd 1025 ft. Mid-Western Oil Co.'s No. L-1, 28-4-27, td 2054 ft, on pump, making 25 bbls, cut 95 percent. Nine Springs Oil Co.'s Brinkinhoff 1, 9-7-30, sd 3300 ft. 101 Oil Co.'s Hollister 1, 35-5-33, dr shale 515 ft. Tide Water Associated's Leonis 1, 3-6-33, dr lava 1372 ft. United Western Oil Co's No. 1, 16-7-30, grade. Valley Oil Co.'s Chief 1, 20-9-34, td 2315 ft, trying to locate water. Vista Del Mar Oil Co.'s Williams 1, 16-4-26, td 3050 ft, stuck dr pipe, shot 1600 ft to plug and redr.

SANTA CRUZ COUNTY—Elbo Oil Co.'s Elba 1, 6-12-1, dr shale 200 ft.

VENTURA COUNTY—Continental Oil Co.'s Casitas 1, 7-3-23, td 8018 ft, abn. El Rio Oils' El Rio 1, 6-1-21, (Ofnard) td 3024 ft, pumping 25 bbls, 11 gravity clean oil, planning second lcn. Oxnard Oil Co.'s Voljnoi 1, 10-1-22, (Oxnard) rur. Richfield Oil Corp.'s McFarland 1, 13-2-21, rig. Texas Co.'s Pierce 1, 20-2-21 (Camarillo) rur. Giovani Vai's Scott 1, 4-4-21, dr shale 794 ft.

SOUTHERN CALIFORNIA

NEWHALL—Barnsdall's Rancho S. F. 1, 26-4-17, td 6472 ft, pumping 150 bbls 36.8 gravity oil; No. 2, 26-4-17, dr sand and shale 3620 ft. Holbrook Pet. Co.'s Newhall Land 1, 28-4-16, td 5841 ft, recemented 6⅝ in at 5740 ft.

PICO CANYON—A. G. Burt's No. 1, 36-4-17, sd 1980 ft.

LYNWOOD—Calizoo Oil Co.'s Saulque 1, 9-3-13, dr sand and shale 7184 ft.

EAST TORRANCE—Carson Oil Co.'s No. 1, 31-4-13, dr sand and shale 2474 ft.

NO. LONG BEACH—Geo. L. Clayton's 32-3-12, td 4895 ft, co.

FOX HILLS—Country Club Oil Co.'s No. 1, 19-2-14, dr sand and shale 4264 ft.

ROSECRANS—Harmon-Fisher's Rosecrans 1, 19-3-13, rig.

DAVIDSON CITY—Hilldon Oil Co.'s Flood Control 2, 13-4-13, dr sand and shale 3020 ft.

SUNSET BEACH—A. S. Johnston Dr. Co.'s No. 30, 20-5-11, rur.

WALNUT—Julian & Criswell's Langstaff 1, 5-2-9, dr hard sand streaks sticky blue shale 2013 ft.

HAWTHORNE—Lennox Pet. Corp.'s Lennox 1, 3-3-14, dr brown shale 4780 ft.

PALOS VERDES—McClaren Bros. No. 1, 27-4-14, td 3970 ft, redr to 1870 ft, to run liner.

MONTEREY PARK—Wales Pet. Co.'s Haig 1, 26-1-12, dr shale streaks sand 3020 ft.

ORANGE COUNTY—Wm. Alexander's No.

1, 22-3-9, foundation. Amalgamated Oil & Gas Co.'s Parr Com. 1, 22-3-9, lcn. Mesa Oil Co.'s Mesa 1, 29-6-10, pumping water trace of oil. Signet Oil Co.'s Signet 1, 21-3-9, td 1875 ft to set 10 in at 1760 ft. West American Oil Co's Irvine 1, 14-5-9, dr shale 6044 ft.

SAN BERNARDINO COUNTY—Quartermaster Oil Prod. Co.'s No. 1, 21-5-6 (Victor Valley) lcn.

FLORIDA

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 2, se se 17-24s-25e, testing 2500-2600 ft after pb, old td 6126 ft.

LEVY COUNTY — Florida Oil Discovery Co.'s Sholtz 1, sw ne 9-15s-13e, dr 510 ft, Ocala limestone.

NASSAU COUNTY—St. Mary's River Oil Corp.'s Hilliard Turpentine Co. 1, nw nw se 19-4n-24e, dr 2315 ft lime.

KANSAS

BARBER COUNTY—Pryor & Lockhart's Gant 1, cse¼ 7-31s-13w, td 4438 ft, pot 1351 bbls oil, comp. Barbara Oil Co.'s Holmes 1-27, cnw nw 27-33s-13w, dr cem. W. I. Southern's Davis 3, se se ne 24-34s-15w, dr 3545 ft.

BARTON COUNTY—Republic Nat. Gas Co. & Continental's Moeder 1, ne ne sw 25-17s-13w, td 3430 ft, D&A. Sam Murphy's Beck 1, ne ne ne 17-17s-12w, dr 1580 ft. S. E. Bailey's Hammeke 1, ne ne sw 12-18s-12w, set 5-in csg 3402 ft, 2000 ft oih, 10 days. Shell Pet. Corp.'s Schneider 1, cse¼ 12-16s-14w, td 3352 ft, D&A. Stanolind O&G Co.'s Schartz 1, nw nw nw 33-19s-11w, shot with 10 qts 3346-49 ft, co. Helmerich & Payne et al's Sessler 1, sw sw se 29-20s-11w, dr 2772 ft. Hanna et al's Luce 1, sw sw sw 21-20s-13w, rust 3300 ft. Phillips Pet. Co.'s McClanahan 1, ne ne se 7-16s-13w, rot rig. Ralph Wixon et al's Buhrle 1, se se ne 14-16s-13w, cel. Stanolind, Continental and I. T. I. O. Co.'s Nat'l Bank 1, se se sw 36-16s-13w, mim.

BUTLER COUNTY—Simpson Oil Co. et al's Dennis 1-A, ne ne sw 15-26s-6e, dr 3208 ft. Maurer & Saco Oil Co.'s Connell 1, ne ne sw 27-29s-5e, dr 2215 ft.

CHASE COUNTY—Calif-Illinois-Kansas Oil Co.'s Hughes 1, sw nw se 13-22s-9e, dr 470 ft.

CHAUTAUQUA COUNTY — Robinson et al's Foster 1, sw sw sw 6-33s-12e, hfo 1994 ft. C. L. Brosius et al's Garrett 1, nw sw nw 26-32s-11e, sd 1200 ft. S. H. Vineard's Hughs 1, ne ne se 13-32s-12e, dr 200 ft. C. R. Ross et al's Walker 1, nw nw se 5-33s-11e, dr 20 ft.

COWLEY COUNTY—Blair, Continental & McKnab's Miller 1, ne nw sw 14-32s-5e, p 10 bbls oil daily. Trees Oil Co.'s Hornbeck 1, nw nw nw 5-33s-4e, ur 8-in csg 2394 ft. Earl Wakefield's Powers 1, nw sw nw 8-32s-6e, set 8-in csg 2035 ft, co. Lewis Prod. Co.'s Feaster 1, se nw sw 36-32s-5e, dr 1270 ft. Pryor & Lockhart's Brown 1, ne se se 34-33s-3e, lcn. E. B. Shawver's Fee 1, nw ne se 3-30s-4e, spd. Rex & Morris et al's Lanier 1, ne ne nw 10-30s-5e, dr 590 ft.

ELK COUNTY—Tyrrell's Sellars 1, se se se 11-31s-9e, td 2322 ft, a/w 1000 gals, pot 170 bbls oil, comp. Morgan et al's Cook 1, nw nw nw 29-30s-12e, dr 1990 ft. J. C. Way's Tyrill 1, sw sw sw 12-31s-9e, dr 300 ft.

ELLIS COUNTY—Empire's Samuelson 1, ne ne ne 31-11s-16w, woc. Billings' Smith 1, se se nw 14-12s-16w, rebldg rig. Earl Wakefield et al's Burnett 1, nw nw ne 1-11s-18w, fsg 2690 ft. Austin Co.'s Karlin 1, nw nw nw 13-12s-18w, dr 200 ft. Vickers et al's Parker 1, cn½ ne nw 35-11s-18w, ur 8-in csg 2550 ft. Empire O&R Co.'s Hall 1, ne ne ne 14-11s-17w, dr 2700 ft. Lario O&G Co.'s Bell 1, nw nw ne 8-12s-18w, fsg 675 ft. Western Kan. O&R Corp. & Aylward Prod. Co.'s Schmeidler 1, nw nw nw 22-12s-17w, dr 865 ft. Skiles et al's Jensen 1, sw se ne 26-12s-18w, sd 510 ft. Reynolds et al's Polcyn 1, se se ne 24-13s-16w, rig. Vickers Pet. Co.'s Lucas 1, nw nw ne 16-17s-14w, ru. Colonial Oil Co.'s Albert 1, sw sw ne 31-12s-18w, mim. Brunson Drlg. Co. & Glimac Oil Co.'s Weisner 1, se sw se 31-13s-17w, rig.

ELLSWORTH COUNTY — Skiles et al's Sturn 1-A, se se sw 31-17s-9w, dr 350 ft. Equity Gas et al's Razac 1, ne ne se 31-15s-10w, sd.

GRANT COUNTY—Kuhn Bros.' Alderman 1, csw¼ 18-29s-35w, set 8-in csg 2476 ft, rust. Panhandle Eastern P. L. Co.'s Taggert 1, C. Sec 11-30s-37w, set 10-in csg 561 ft, woc.

GREENWOOD COUNTY—Ward McGinnis et al's Henley Estate 1, sw sw sw 25-25s-9e, pb. Western Kan. O&R Co.'s Taylor 1, se se sw 6-27s-12e, dr 1400 ft.

HAMILTON COUNTY—Barnsdall Oil Co. et al's Porter 1, sw sw ne 30-25s-41w, dr 4953 ft.

HARPER COUNTY—Magnolia Pet. Co.'s Arch Freeman 1, se nw sw 3-31s-6w, dr 4420 ft.

HARVEY COUNTY—Simpson & Noble et al's Pierce 1, sw se ne 25-22s-2w, wih 3016-23 ft. Bell O&G Co. et al's Austin 1, se ne ne 28-33s-1e, dr 3160 ft. E. I. Shaffer et al's Epp 1, se se sw 15-23s-3w, dr 3451 ft.

KIOWA COUNTY—Stanolind & Amerada's Pyle Jr. 1, cnw ne 8-29s-16w, dr 1635 ft.

LYON COUNTY—Davis & Sory's Davis & Sory 1, sw sw se 32-21s-11e, dr 1270 ft.

MARION COUNTY—West Kan O&R Co.'s Suderman 1, se sw nw 22-20s-2e, dr 920 ft. Hutchinson O&G Co. et al's Ehrman 1, se se sw 15-18s-1e, rig.

McPHERSON COUNTY—C. R. Craft et al's Barnholt 1, sw sw se 30-20s-5w, pull big pipe. Smith et al's Larson 1, nw nw sw 35-18s-5w, td 3503 ft, D&A. Fred C. Frank et al's Doles 1, se nw ne 12-19s-1w, sd for wtr well. Wamhoff et al's Nuse 1, se se sw 18-18s-4w, sd 1320 ft. Clyde Pulse et al's Boesker 1, se se nw 29-20s-1w, mim.

MITCHELL COUNTY—Geo. Seidhoff et al's Greiss 1, sw sw se 16-8s-10w, sd 3548 ft.

NESS COUNTY—Newton Dev. Co. et al's Tenny 1, nw nw se 19-18s-25w, sd 4406 ft. Jones & Lane's Page Milling Co. 1, se se nw 36-18s-26w, ur 15-in csg 700 ft.

OSBORNE COUNTY—Fred C. Chaddox & Atlantic's Slater 1, ne sw ne 33-10s-15w, spd.

PAWNEE COUNTY—Simpson Oil Co. et al's Hewson 1, se se sw 13-21s-17w, dr 3422 ft.

PRATT COUNTY — Atlantic, Empire & Skelly's Runyon 1, sw nw ne 11-27s-13w, dr 4033 ft. Skelly Oil Co. et al's Adams 1, se nw ne 2-28s-11w, rot rig.

RENO COUNTY — Carter, Continental & Empire's Bontrager 1, C-54, ce½ ne ne 26-24s-5w, dr 3450 ft. Imo O&G Co. et al's Watkins 1, se se se 14-22s-7w, dr 2500 ft. Street & Butler's Kincaid 1, ne ne nw 13-24s-4w, rot rig. Helmerich & Payne et al's Haines 1, sw sw sw 9-25s-5w, rot rig. Jim Carey et al's McPheeters 1, nw nw nw 22-26s-6w, mim.

RICE COUNTY—Fred Phillips et al's Hubenett 1, sw ne sw 23-20s-8w, Aw/1000 gals, pot. p 252 bbls oil and est. 150 bbls wtr, 24 hrs. Comanche Oil Co.'s Cramm 1, sw sw se 15-19s-9w, A/w 3000 gals. Hipple et al's Wernett 1, ne ne nw 11-20s-6w, dr 3664 ft. Skiles et al's Helmer 1, nw nw ne 7-19s-8w, hfw 3455 ft. Witt et al's Fair 1, ne se se 4-22s-8w, set 10-in csg 2201 ft, fsg csg. H. V. Holland et al's Brothers 1, se se se 12-21s-7w, dr 2230 ft. Gillespie et al's Strong 1, ne ne nw 9-18s-8w, ru. John Hanna et al's Marshall 1, ne nw nw 30-18s-8w, set 12-in csg 332 ft. Shell Pet. Corp.'s Grizzell 1, cw½ w½ sw 5-19s-9w, dr 3095 ft.

ROOKS COUNTY—S. C. Hoel et al's Ives 1, sw sw ne 11-7s-18w, td 3566 ft, D&A.

RUSH COUNTY — S. A. Murphy et al's Roth 1, nw nw sw 21-16s-18w, est flow 5,000,000 to 6,000,000 cf gas. Duee & Brouk's Lebsack 1, se se ne 13-16s-16w, td 3512 ft, D&A. Crawford et al's Jones 1, nw nw nw 35-17s-16w, set 15-in csg 325 ft. Wakefield et al's Zimmerman 1, se se sw 7-16s-18w, rig.

RUSSELL COUNTY—Goldstein & Vernon O&G Co.'s Steinert Estate 1, ne se sw 34-15s-15w, dr 3150 ft. Parks' Opdyche 1, sw sw sw 20-14s-13w, ru. Shell Pet. Corp.'s Batt 1, se se se 35-15s-14w, bldg rot rig. William Steinle et al's Anderson 1, ne se sw 33-15s-11w, rig.

SCOTT COUNTY—Olson Drlg. Co et al's Nolan 1, nw nw ne 13-19s-33w, td 5035 ft, D&A.

SEDGWICK COUNTY—E. B. Shawver's Furman 1, sw ne se 24-29s-3w, dr 4470 ft. Union O&R et al's Howell 1, sw sw sw 6-29s-1e, dr 330 ft. Ryan Consolidated et al's Williams 1, nw nw se 17-25s-2w, circ 3941 ft. E. H. Moore's Naughter 1, sw sw nw 29-29s-1e, dr 3220 ft. Talbott et al's Downs Estate 1, se se nw 32-28s-2e, ru. Home Stake Royalty's McCormick 1, sw sw nw 23-25s-3w, bldg rot rig.

STAFFORD COUNTY — Rosespring Drlg. Co. et al's Gray 1, nw nw nw 11-24s-13w, td 4034 ft, D&A. Atlantic O&R Co.'s Kachelman 1, se nw nw 13-25s-14w, dr 4333 ft. Newman & Winemiller's Sittner 1, ne ne ne 33-21s-12w, rig. Faulkner's Moses 1, nw nw sw 9-22s-13w, lcn. Stanolind O&G Co.'s Abe Francis 1, ne ne nw 26-22s-13w, skid 24 ft north, dr 225 ft.

STEVENS COUNTY—Kuhn Bros. et al's Youngren 1, sw sw ne 1-32s-39w, lcn.

SUMNER COUNTY—Glimac Oil Co. et al's Proud 1, sw se se 33-30s-1w, dr 4018 ft. W. M. McKnab's Blair 1, sw sw sw 7-30s-1e, fsg 200 ft. Faulkner et al's Nevitt 1, ne nw ne 36-32s-6e, pb 2830 ft, 35 bbls oil per day, comp. National Ref. Co.'s Schwantes 1, nw sw ne 16-32s-3e, ru. Douglas & Gears' Strickler 1, sw nw ne 30-32s-1w, dr 1775 ft. Burton et al's Springate 1, ne ne sw 30-33s-2e, abd at 91 ft.

TREGO COUNTY—W. I. Southern's Latimer 1, nw nw se 19-15s-22w, ur 7-in csg 4360 ft. Turner et al's Rogers 1, csw¼ 3-15s-23w, dr 4490 ft. F. L. Thorn et al's Dix 1, se se sw 31-14s-24w, td 3664 ft, rust.

WOODSON COUNTY—Morris et al's Koe-

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ning 1, se se nw 35-24s-15e, sd 1231 ft. Fred Rapp's Houghland 1, nw nw se 2-25s-15e, dr 900 ft. B. & B. Oil Co.'s Lockard 1, nw nw ne 2-26s-13e, dr 1040 ft. Lilly et al's Wall 1, sw se se 25-25s-13e, dr 300 ft.

SOUTH LOUISIANA

ACADIA PARISH—Humble's Federal Land Bank 1, North Crowley prospect, 34-8s-1e, dr shale 8719 ft. John Mayo et al's Bank of Commerce 1, e of Tepetate, 19-7s-1e, probably abn 9008 ft. J. E. Daniel's Setting 1, Trilby prospect, 17-9s-1w, pb 925 ft. J. G. Markley et al's Daigle Farms Co. 1, Churchpoint prospect, 19-7s-2e, dk.

AVOYELLES PARISH—Coastal Minerals Dev. Co.'s Purdy Hass 1, 25-2n-3e, dr shale 4498 ft.

CALCASIEU PARISH—Stanolind's Prairie Land & Canal Co. 1, South Lake Charles prospect, 10-11s-9w, dr shale 6019 ft.

CAMERON PARISH—Humble's Bell Hanszen 1, Hanszen prospect, 5-12s-6w, dr shale 9056 ft; same operator's Miani Corp. 1, Prema area, 8-14s-5w, lcn. Pure's State Mallard Bay 2, Mallard Bay prospect, 14-13s-3w, dr shale 5176 ft. Superior's State Gulf of Mexico 1, in Gulf of Mexico, 4-15s-8w, driving piling.

EAST BATON ROUGE PARISH—Louisiana Crusader Oil Co.'s State 2, University Block, 65-7s-1w, dr shale 7798 ft. Cavalier Oil Co.'s Elliott 1, n of Hope Villa, 3-8s2e, fsh 6128 ft.

EAST FELICIANA PARISH—G. C. Koch et al's Andrews 1, Clinton area, 69-2s-3e, dr shale 5932 ft.

EVANGELINE PARISH—Continental's Tate 1, Villa Platte area, 44-3s-2e, dr shale 6277 ft.

IBERIA PARISH—Jefferson Lake Oil Co.'s Lake Peigneur 414, Jefferson Island dome, 12s-5e, testing 6686 ft.

JEFFERSON DAVIS PARISH—Stanolind's Calcasieu National Bank B-2, China prospect, 28-7s-3w, dr plugs 9089 ft. Union Sulphur's T. R. S. Farms 1, South Roanoke area, 23-10s-4w, dr shale 8502 ft.

LAFOURCHE PARISH—Gulf's Louisiana State 3, sw of Marchland prospect, 36-23s-21e, dr shale 4100 ft.

LIVINGSTON PARISH—Neville & Grubb's Evans 1, ne of Hope Villa, 47-7s-3e, dr shale 1786 ft.

PLAQUEMINES PARISH — Gulf's State OO-3, 17-13s-17e, wor. Tide Water's Manhattan Fruit 3, Venice Dome, 26-21s-30e, comp 9 bbls per hour, 5/32-in choke, 7208 ft.

ST. BERNARD PARISH—Gulf's Lake Lery 2, Lake Lery prospect, 28-14s-14e, abn 6667 ft. Southern Sulphur's State 2, Lake Borgne, 38-14s-15e, sd 3442 ft.

ST. CHARLES PARISH—Amerada & Louisiana Land & Exploration Co.'s State 1, Black Prince Island prospect, 13-15s-20e, woc 6230 ft.

ST. LANDRY PARISH—Gulf's Haas Hirsch 1, Krotz Springs area, 12-6s-7e, dr shale 7170 ft.

ST. MARTIN PARISH—Texas Co.'s State 3, Lake Mongouloi salt dome, 14-10s-9e, sdtr 6492 ft.

ST. MARY PARISH—Texas Co.'s State 1, Bateman Lake area, 21-16s-12e, fsh 10,541 ft; same operator's Horseshoe Bayou 1, on Horseshoe Bayou, 40-17s-9e, fsh 11,325 ft.

VERMILLION PARISH — Continental's Brookshire 1, Abbeville area, 66-12s-3e, dr shale 9760 ft.

VERNON PARISH—Castor Creek Dr. Co.'s Llano Del Rio 1, 34-2n-9w, lcn. Geo. J. Greer's Commercial Bank 1, se of Leesville, 9-1s-8w, dr shale 4728 ft.

NORTH LOUISIANA

BIENVILLE PARISH—DeSoto O&G Co.'s Wm. Ashley 1, sw se 15-16n-10w, csg cemtd 5485 ft, td 5600 ft; Wm. Ashley 2, 15-16n-10w, lcn. Hunt & Seaboard's Goodpine 1, se se 30-14n-5w, coring 7604 ft. Lide Greer et al's Davis Lbr. Co. 2, w½ w½ 12-16n-5w, coring 6182 ft. McDowell et al's Locke 1, nec 9-15n-10w, fsg 2921 ft.

CADDO PARISH—W. J. Hunter et al's N. B. Stoer 1, 10-15n-15w, pb to 6012 ft from 6562 ft, perf cas and arr test. R. W. Norton's Payne 1, se se 27-23n-16w, hole clean, arr perf above 9454 ft, old td 11,486 ft. Prairie River Synd.'s Hutchinson 1, 15-15n-12w, dr 8115 ft shale. Fallon Oil Co.'s Cupples 1, 24-16n-13w, re-cemnt 5¾ in csg at 4960 ft, old td 5675 ft.

CLAIBORNE PARISH—J. R. Bevill et al's Alex Edmonds 1, ne ne 16-20n-5w, hole clean, arr core 5065 ft. J. B. Bond's Burgess 1, 3-20n-5w, arr acidize, td 5800 ft.

DE SOTO PARISH—Pearl Oil Co., Joyner 1, 28-11n-12w, sd 5388 ft. A. D. Robinson's Allison 1, 17-14n-13w, install new rig, td 63 ft. C. T. Ruffing's Redding 1, 35-11n-11w, changing rig, surf csg set. Lyons & Neely's J. P. Barron 1, nw se 36-11n-11w, mir. Pullman Oil Co.'s Ramsey 3, 36-11n-11w, dr 1800 ft. Paul Miller's Barron 1, 36-11n-11w, dr 500 ft.

FRANKLIN PARISH—Jenson et al's Grayson 1, c ne 36-12n-6e, dr 2480 ft.

LINCOLN PARISH—G. E. Burford et al's Hanna 1, w½ se 34-18n-4w, spd. H. D. Easton and Belmont Quadrangle Drlg. Co.'s G. W. Dye 1, ne ne 21-19n-4w, cemtd csg 4986 ft, woc old 6011 ft. E. T. Oakes, Easton et al's R. L. Sanderson 1, 30-18n-1w, dk. T. L. James & Co.s Spencer 1, ne 11-17n-4w, straightening hole, td 2136 ft.

MOREHOUSE PARISH—Rondeau et al's Clarke 1, 10-20n-7e, owdd, td 3755 ft.

NATCHITOCHES PARISH—Jack Lent et al's Locke 1, 26-9n-9w, sd 2932 ft. Roy Raines et al's Allen 1, 22-9n-10w, sd 220 ft.

RED RIVER PARISH—Whitehurst et al's LeLong 1, 25-12n-11w, woc 13⅜ in csg 250 ft.

RAPIDES PARISH—F. W. Martin's Hill 1, 24-5n-4w, fsg 580 ft. R. D. Webb's Brasher 1, 22-4n-2w, sd 5255 ft.

SABINE PARISH—Deep Rock Oil Co. et al's Whitney Corp. 1, 8-9n-13w, dr 7604 ft. E. Howard's Sabine Lbr. Co. 1, ne nw 24-9n-12w, rur. Romine et al's La. Long Leaf Lbr. Co. 1, 7-5-12, rur.

TENSAS PARISH — Ark. La. Gas Co.'s Hardwood Timber Co. 1, 8-11n-10e, abn 3070 ft. Sherrouse & Snyder's Chicago Mill & Lbr. Co. 1, 30-12n-10e, sd 798 ft.

WEBSTER PARISH—Magnolia's Barnes-Cox 4, 22-21n-10w, lcn; G. W. Cole 2, 27-21n-10w, dr 8031 ft; Ira Cox 6, 23-21n-10w, dr 7660 ft; A. J. McCook 2, 22-21n-10w, dr 6957 ft. Oliphant et al's Sam Banks 1, 34-21n-10w, 2936 ft. Ohio's Bodcaw Ac. 2, 47, 15-21n-10w, dr 5575 ft. Thomas Crichton Ac. 2, 1, 21-21n-10w, dr 5285 ft; L. M. Gardner 1, 22-21n-10w, woc, td 8333 ft; R. L. Holloway B-7, 23-21n-10w, sd 4819 ft. Woodley Pet. Co.'s R. C. Cox B-2, 22-21n-10w. Bay Oil Co.'s A. J. Oliphant 1, ne ne 34-21n-10w, lcn. Standard Oil Co. of La.'s E. L. Stewart 1, 32-21n-10w, dr 8091 ft.

WEST CARROLL PARISH—Rodessa O&G Co.'s Neely 1, se sw 19-20n-11e, dr 2541 ft.

WINN PARISH — Georgetown Oil Co.'s Tremont Lbr. Co. 1, 19-10n-1e, rur.

MICHIGAN

ALLEGAN COUNTY—Champion Development Co.'s Detling 1, sec 35-2n-13w, dr 130 ft; Siko 1, sec 9-1n-12w, lcn. Flannigan & Kehlet's Clair 1, sec 29-1n-13w, testing after acid, pumped 50 bbls net oil at 1610 ft. Hubel Oil Co.'s Madalinski 1, ne ne sw 18-1n-13w, lcn.

ARENAC COUNTY—Gordon Oil Co.'s State B1, sec 2-19n-3e, dr lower Traverse lime, 2310 ft. E. H. Linaberry's McTaggart 1, sec 26-19n-3e, Traverse 2012 ft, so 2031-45 ft, shot 30 quarts, pumping 40 bbls net.

CASS COUNTY—L. T. Barber's Beebe 1, sec 3-5s-15w, drilling Trenton lime, 1730 ft. Wayne Oil Co.'s Gebhard 1, sec 34-5s-15w, dr 300 ft.

CLARE COUNTY—Pure Oil Co.'s Apel 1, sec 31-19n-5w, sd 690 ft for standard tools. Jeames Peirce's Mortenson 1, sec 9-18n-5w, sd 1250 ft.

GLADWIN COUNTY—H. J. Hand's Smart 1, sec 29-17n-2e, dr 400 ft. Bell & Mark's Steel 1, sec 22-20n-1e, cementing 6-in 3300 ft, hfw. F. C. Stover's Bushomg 1, sec 16-18n-1e, lcn. Dibble Brothers' Kimble 1, sec 16-18n-1e, dr 3100 ft. W. H. Thourby's Kliz 1, sec 28-18n-1e, lcn. D. E. Hughe's Cox 1, sec 12-19n-2w, mim. C. E. McLaughlin's Simmons 1, sec 28-19n-2w, sd 260 ft. Dapar Oil Co.'s Villeneuve 1, sec 11-20n-2w, rig.

GRATIOT COUNTY—Sam Siegel's Kerr 1, sec 36-10n-1w, sd 2250 ft. Carter Oil Co.'s Hirschman 1, sec 13-10n-3w, dr 1200 ft. H. B. Cowdry's DeVuyst 1, sec 11-10n-2w, dr 2760 ft.

MIDLAND COUNTY—Sun Oil Co.'s Consumers Power 1, c n½ ne ne, 8-16n-1w, rig. T. F. Caldwell, Inc.'s Kriegel 1, sw sw ne 36-15n-1w, dr 1000 ft.

OTSEGO COUNTY—Dion Geraldine's Fee 1, sec 34-30n-3w, lcn. Harley William's Raae 1, sec 15-30n-1w, 4 in csg 2560 ft. Barton & William's Yuill 1, sec 9-32n-3w, dr 300 ft.

SAGINAW COUNTY—Darke Brothers' Hart 1, sec 11-11n-3e, sd 3050 ft. Doran & Hilliard's Dobs 1, sec 33-11n-1e, dr 1300 ft.

MISCELLANEOUS COUNTIES — Bay: Wright & Keeler's Booth 1, sec 24-14n-6e, dr 1125 ft. Crawford: Dome Oil Co.'s Lindgren 1, sec 33-25n-3w, rig. Emmet: Cheboygan Oil Co.'s Barney 1, sec 12-35n-4w, sd 500 ft. Huron: C. W. Teeter's Haldane 1, sec 30-16n-12e, dr 1700 ft. Iosco: Pabst Petroleum Co.'s Monfort 1, sec 8-22n-6e, dr 3255 ft. Mackinac: Charles Van Kuren's Hiawatha 2, sec 5-44n-9w, lcn. Missaukee: Rex Oil Co.'s Meekoff 1, sec 30-21n-6w, dr 2550 ft. Newaygo: Muskegon Oil Co.'s Carlson 1, sec 9-16n-12w, dr 2800 ft. Osceola: Osceola Oil Co.'s Gregg 1, sec 22-18n-7w, lcn. Oscoda: Burr Oil Co.'s Smith 1, sec 36-27n-2e, lcn. Roscommon: Sager & Swan's Barnett 1, sec 36-21n-1w, dr 550 ft. Tuscola: C. W. Spaulding's Dalrymple 1, sec 35-10n-7e, dr 1200 ft.

MISSISSIPPI

BOLIVAR COUNTY—Phillips Pet. Co.'s Perthshire 1, 2-24n-7w, dr 4350 ft blue shale. White & Jones' Ballou 1, ne ne 18-24n-7w, sd 1680 ft.

CLAIBORNE COUNTY—Claiborne O&G Drlg. Co.'s Crawford 1, 6-13n-4e, elev 115 ft, dr 2010 ft.

GEORGE COUNTY—Cleve Love et al's J. J. Newman Lbr. Co. 1, c sw 9-1s-8w, dr 4452 ft, shale.

HARRISON COUNTY—G. A. Hesse et al's Hingin 1, c ne 12-7s-10w, arr deepen, td 2332 ft.

KEMPER COUNTY—R. A. Keaton et al's Buckwalter Lbr. Co. 1, nec 6-10n-14e, dk.

LAMAR COUNTY—Sun Oil Co. et al's Kate Talley 3, 33-4n-15w, elev 388 ft, top Midway 4140 ft, dr 5050 ft black lime and shale.

MADISON COUNTY—Sun Oil Co. et al's J. E. Wilson 1, se se 1-8n-2w, elev 218 ft, top

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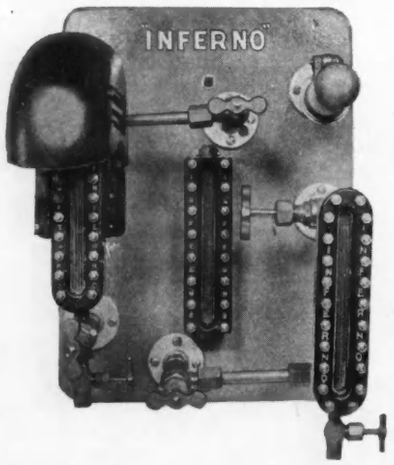

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"Makers of Better Steam Equipment"

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Have You Taken the Peace Pledge? Write for Information.

Cane River 1530 ft, straightening hole, td 1892 ft shale, shell and sand.

PIKE COUNTY — Acadian Prod. Corp.'s Bales 1, c se nw 24-7n-2e, dk.

SIMPSON COUNTY—Goodwill O&G Co.'s Berry 1, 33-2n-4e, rog.

SUNFLOWER COUNTY — Phillips Pet. Co.'s Dockery 1, sw ne 27-22n-4w, rur.

WILKINSON COUNTY—Chas. Green et al's Julian Taylor 1, 4-3n-1e, elev 251 ft, woc 16 in csg 50 ft. A. B. Taylor et al's Miss-Wis. L. & T. Co. 1, nw sw sw 34-4n-1w, dr 3016 ft. H. L. Carnahan, Tr.'s Foster Creek Lbr. Co. 1, 1-2n-2w, dk and mir.

MONTANA

BLAINE COUNTY—Nadeau Bros.' Fee 1, nw sw se 33-34n-17e, sg 765 ft.

CARBON COUNTY—George Muth & Ft. Peck Association's 1, csl se se 23-6s-23e, dr 1580 ft. R. C. Tarrant's Heare 1, cwl ne nw 14-6s-19e, dr 312 ft.

PONDERA COUNTY—Kirk Oil Co.'s Kellogg 1, fsg for tubing at 2296 ft, td.

ROOSEVELT COUNTY—John Schmidt et al's 1, nw nw ne 21-28n-50e, se 640 ft, td 650 ft.

TOOLE COUNTY—Model Oil Co.'s Fey 1, cne sw 5-37n-3e, dr 1000 ft.

YELLOWSTONE COUNTY — Broadview Dome Oil Co.'s Nalbritter-Stoltenberg 1, ne ne sw 18-3n-23e, dr 950 ft. Western Dakota Oil Co.'s Fox 1, cel nw ne 14-2s-23e, dr 890 ft.

NEBRASKA

DAWES COUNTY — Stephens Petroleum Corp.'s S. J. Palmer 1, nw sw 10-35n-50w, dr 2340 ft.

JEFFERSON COUNTY—L. R. Page et al's Bonham 1, cse se 31-1n-1e, ru.

SIOUX COUNTY—J. M. Huber Corp.'s Morgan 1, csw sw 32-35n-56w, dr 2990 ft.

OKLAHOMA

BECKHAM COUNTY—Mid-American Oil Co.'s Biscoe 1-A, sw sw sw 28-8n-22w, dr 2200 ft. Bud Lewis' Douglas 1-A, cse ne 21-8n-26w, dr 260 ft.

CADDO COUNTY—Clyde Becker et al's Pharris 1, cse se nw 24-6n-12w, dr 5200 ft.

CARTER COUNTY — Shell Pet. Corp.'s Smith 1, cnw se ne 30-5s-1e, td 4222 ft, D&A.

CLEVELAND COUNTY—Hollenback's Stinson 1, nw nw ne 17-9n-2w, fshg. Hollenback's Ward 1, sw se ne 30-7n-1e, rog.

COTTON COUNTY—I.T.I.O. Co.'s Collins 1, ne ne ne 18-4s-10w, dr 2250 ft. Bowers & Wise' Pendergraft 1, cnw se sw 4-4s-12w, bldg der. E. B. Hanes' Duper 1, nw nw nw 21-2n-13w, td 250 ft, D & A.

CREEK COUNTY—Continental Oil Co et al's Community 1, ne ne sw 7-15n-7e, lcn. Mosier et al's Holcomb 1, se sw ne 19-18n-8e, hfw 3002 ft, sd. Jackson's Alberty 1, ne ne nw 25-18n-9e, dr 200 ft.

GARVIN COUNTY—Carter Oil Co.'s Potts 1, ce/2 se nw 36-1n-3w, dr 1350 ft. Nels-Bufton et al's J. E. Burch 1, se se sw 3-3n-1w, woc 3465 ft. C. F. Dillingham's Evans 1, cnw nw sw 12-1s-3w, lcn.

GRADY COUNTY—Gulf Oil Corp.'s Thomas 1, sw nw nw 14-4n-5w, dr 4120 ft. Doyle Pet. Co.'s Huffine 1, cnw nw se 30-5n-8w, der.

GRANT COUNTY—Carter Oil Co. et al's Crisman 1, nw sw nw 16-25n-3w, dr 4987 ft. Carter Oil et al's Kolarik 1, csl s/2 sw 4-28n-5w, dr 5330 ft.

HASKELL COUNTY—Continental Oil Co.'s Anderson 1, sw se ne 33-8n-20e, woc 5597 ft.

HUGHES COUNTY—Chas. Thornton's Eason 1, ne ne nw 7-9n-11e, td 3944 ft, D & A. E. H. Moore's Buck 1, nw sw sw 21-8n-10e, dr 2975 ft. Moroney & Healey's Field 1, cnw sw 11-9n-11e, fshg 2780 ft. The Texas Co.'s Cox 1, ne nw nw 23-9n-8e, dr 2885 ft. W. O. Allen's Barnard 1, sw sw sw 24-8n-8e, to core 3335 ft.

JACKSON COUNTY—Ace Gutowsky's Howard 1, sw sw nw 10-3n-19w, sdo 891 ft. Ernest Lippert et al's Miller 1, nw nw nw 4-2n-18w, dr 150 ft.

JOHNSTON COUNTY—Neff & Godfrey's Chapman 1, csw se sw 36-4s-4e, dr 1320 ft.

KAY COUNTY—Black Gold Oil Co.'s Cooley 2, sw sw sw 25-28n-4e, td 1391 ft, hfw, hole caving, prep to run 8-in csg.

KIOWA COUNTY — Kiowa Oil Corp.'s Finder 1, csw ne 4-6n-20w, sd 940 ft. Ace Gutowsky's Booker 1, nw nw nw 33-2n-18w, sd 580 ft. Hughes & Reese' Fultz 1, cse se se 10-6n-18w, mach.

LATIMER COUNTY—Clark Drlg. Co. et al's Wilson 1, cse se 15-5n-18e, sdo 6515 ft.

LINCOLN COUNTY—Cimmaron Oil Corp.'s Frank Arner 1, csw se 31-17n-2e, dr 3420 ft.

LOGAN COUNTY—Freeland et al's Woods 1, se se sw 27-17n-1e, rog. Shell Pet Corp. et al's Waddle 1, sw se nw 36-15n-4w, dr 3912 ft. Sunray & Olson Drlg. Co.'s Canning 1, sw sw ne 31-17n-1w, dg pits.

LOVE COUNTY—Sinclair Prairie's Stockton 1, se se sw 26-6s-2w, flo 45 bbls oil while run tbng.

MAJOR COUNTY—Ed V. Parson et al's Patzkowsky 1, cnw/4 10-20n-11w, rig.

MARSHALL COUNTY—Stewart & Taylor's Chestnut 1, ne ne ne 23-8s-5e, sd 782 ft. Stewart & Taylor's Chestnut 2, ne ne ne 23-8s-5e, sd 751 ft.

McCURTAIN COUNTY—Wilcox O & G Co.'s No. 1, sw se sw 30-2s-27e, ur 10¾-in csg 990 ft.

MURRAY COUNTY—O. O. Owens' Fryer 1, ne se ne 34-1s-3e, sd 2547 ft. Power Oil Co's Lancaster Trust Co. 1, csw ne 10-1s-2e, lay wtr lines.

NOBLE COUNTY—Lincoln Oil Co. et al's Neil 1-A, ne ne ne 15-23n-2w, dr 5146 ft. Stanolind & Amerada's Johnson 1, nw nw se 4-20n-2w, sdo 5418 ft. Herndon Drlg. Co.'s Baggett 1, se se se 13-12n-3e, dr 2190 ft.

OKFUSKEE COUNTY—Riverland Oil Co.'s Board 1, ne nw se 10-13n-10e, dr 2750 ft. Burke-Greis' Rhea 1, sw sw se 14-10n-9e, dr 95 ft. F. W. Merrick's Mackey 1, ne ne sw 29-11n-10e, dr 415 ft. Palmer Oil Corp.'s Welty 1, se se se 2-12n-7e, rur, spd.

OKLAHOMA COUNTY—Frank Buttram et al's Cole 1, nw nw nw 16-14n-1e, dg cel.

OSAGE COUNTY—Norbla Oil Co.'s No. 1, se se se 36-23n-6e, dr 950 ft.

PAWNEE COUNTY—Carter Oil Co.'s Wells 1, ce/2 se nw 30-23n-5e, dr 2544 ft.

PAYNE COUNTY—H. F. Young's Jenkins 1, se ne se 4-17n-3e, dr 4595 ft.

PONTOTOC COUNTY—Southern Oil Co.'s Young 1, ne ne se 17-3n-7e, td 990 ft, ur 11-in csg. Roodhouse et al's Booth 1, se nw se 20-2n-6e, testing. Clark Drlg. Co. & Delaney's Richardson 1, se se sw 30-4n-8e, dr 4620 ft. Boettcher O & G Co.'s Gann 1, se nw ne 25-4n-7e, cor 3865-81 ft, slight stain. Norbla Oil Co.'s Kennedy 1, se se ne 13-2n-5e, dr 1320 ft. Union Dev. Co.'s Abbott 1, sw nw ne 34-3n-6e, dr 2148 ft. W. E. Delaney et al's Payton 1, ne ne se 1-4n-7e, dr 4185 ft.

POTTAWATOMIE COUNTY—Stanolind & Amerada's Billington 1, sw se sw 32-9n-3e, flo 349 bbls oil net 6 hrs. Atlantic Ref. Co.'s Dooley 1, se se sw 9-11n-5e, woc 4919 ft. Mid-Continent Pet. Corp. et al's Ne-Thah-Pea-Se 1, se se ne 24-11n-4e, dr 4270 ft. C. H. Yookums' No. 1, se se ne 27-6n-4e, spd. Roy S. Nash et al's Miller 1, cn/2 ne se 29-6n-3e, lcn.

PUSHMATAHA COUNTY— Erle Halliburton et al's Bogwell 1, sw ne ne 30-3s-15e, recem.

SEMINOLE COUNTY—Stanolind & Amerada et al's Salina 1, se ne nw 4-5n-6e, rig.

STEPHENS COUNTY—Carter Oil Co. et al's Harley 1, cne ne 24-2s-4w, dr 7260 ft. Coline Oil Co.'s Johnson 1, csw se ne 1-2n-8w, dr 7645 ft. Ed Parsons et al's Blake 1, csw nw 22-2n-8w, dr 4730 ft.

TILLMAN COUNTY—I.T.I.O. Co. et al's Hatler 1, csw ne 32-2s-17w, P. 58 bbls oil & 136 bbls wtr 24 hrs; Comp. Tom Walker's Bowman 1, sw sw nw 10-4s-17w, sd 20 ft.

WASHITA COUNTY—John Koberg's Harms 1, cnw nw ne 6-10n-16w, td 3205 ft, rep pumps.

WEST TEXAS

(This report is confined to the north portion of the Permian basin).

ANDREWS COUNTY—Amerada Pet. Corp.'s L. Littman 1, c nw nw PSL section 6, blk A-29, elev 3577 ft, top anhydrite 1621 ft, salt series 1701-2770 ft, top Yates 2930 ft, top lime 3860 ft, pay 4316-4365 ft, used 1000 gals acid and swab 52 bbls 31.7 gravity oil 13 hrs; re-used 2000 gals acid and swab 48 bbls 18 hrs, dd to 4400 ft, sd to re-acidize. American Liberty Oil Co.'s E. P. Cowden 1, c ne nw PSL sec 14, blk A-55, elev 3114 ft, top anhydrite 1162 ft, salt 1250-2530 ft, top brown lime 2630 ft, trace gas 3170-80 ft, dr 3410 ft. W. G. Blanchard & H. J. Porter's Cox-Amerada 1, c sw sw PSL sec 4, blk A-30, top anhydrite 1595 ft, dr 3610 ft. M. J. Delaney Co.'s H. A. Moore-Gulf 1, sec sw¼ PSL sec 12, blk A-20, elev 3178 ft, top anhydrite 1960 ft, dr 3000 ft. Drilling & Exploration Co., Inc.-Fuhrman Pet. Corp.'s Munger-Nix 1, c sw¼ PSL sec 20, blk A-47, lcn; Thornberry 1, sec nw¼ PSL sec 8, blk A-42, lcn. Empire O&R Co.'s J. D. Biles 1, c sw sw PSL sec 12, blk A-31, elev 3395 ft, top anhydrite 1677 ft, top brown lime 3831 ft, top solid lime 4130 ft, pb from sul water at 4833-5010 ft, to shoot. Wm. F. Hanagan et al's W. F. Scarborough-Llano 1, c ne¼ PSL sec 16, blk A-26, lcn. Humble's B. S. Walker 2, nw sw sw PSL sec 6, blk A-43, td 4465 ft, used acid twice, flowed 60 per hr gas lift. C. L. Peters & A. Hargraves' J. Riordan 1, c sw nw PSL sec 10, blk A-44, elev 3163 ft, top anhydrite 2020 ft, top salt 2080 ft, top Yates 3260 ft, dr 3600 ft. Sinclair Prairie's Emma Cowden 2, nec of T. P. Ry. sec 11, blk 44, T-2-N, elev 3157 ft, top anhydrite 1640 ft, show gas 4070 ft, trace oil 4207-19 ft, dr 4220 ft.

BAILEY COUNTY—Geo. Etz & E. H. Robertson's I. C. Enochs 1, c labor 66, league 182, Floyd C. S. Lands, sp and sd. J. O. Whittington et al's McCelvey Bros. 1, c labor 15, league 161, Presidio C. S. Lands, lcn. Ernest L. Wilson, Illinois Oil Co. et al's Yellow House Ranch 1, ne part of labor 4, league 700 State Capitol Lands, elev 3687 ft, top anhydrite 2000 ft, top salt 2090 ft, first lime stringer 3520 ft, first solid lime 4300 ft, oil stain 4400-50 ft, sd with 2000 ft sul w at 4497-4525 ft.

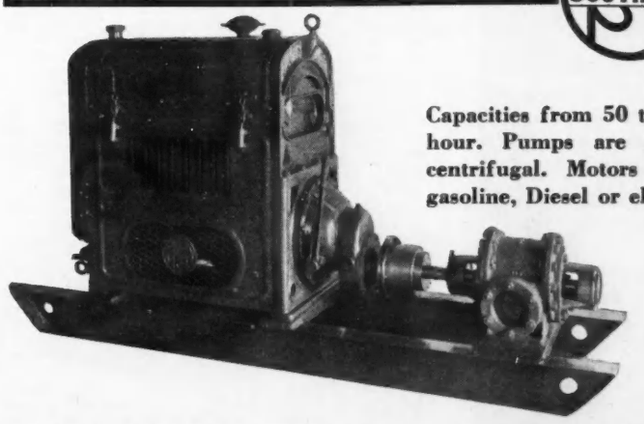
COCHRAN COUNTY—M. S. Inglewright & E. E. Fogelson's Mrs. N. H. Harris' Tarver-Duggan 1, ne part labor 14, league 55, Oldham C. S. Lands, rust at 4800 ft, dr 4807 ft. The Texas Co.'s C. C. Slaughter 1 (3492-ac), sw part league 130, Carson C. S. Lands, elev 3795 ft (ground), dr 1200 ft. Pete N. Wiggins, Jr.-C. Ed. Hyde et al's C. S. Dean-Slaughter 1, labor 26, league 92, Lipscomb C. S. Lands, dr 3520 ft; C. S. Dean-Slaughter (Honolulu) 1, nec league 58, Martin C. S. Lands, lcn.

DAWSON COUNTY—Ray Albaugh et al's Higginbotham 1, labor 24, league 269, Moore C.S.L., lcn; D. Hogg 1, c se se T&P sec 17, blk 34, T-4-N, lcn. Ernest L. Wilson, Atlantic Ref. Co. et al's Scanlan Bros. 1, c nw nw of

PUMPING UNITS

For Crude Oil or Refined Liquids

SOUTHERN



Capacities from 50 to 500 barrels per hour. Pumps are either rotary or centrifugal. Motors are either gas, gasoline, Diesel or electric.

SOUTHERN ENGINE & PUMP COMPANY

HOUSTON, DALLAS, AND KILGORE, TEXAS

E. L. & R. R. Co. section 83, blk M, elev 3111 ft, top anhydrite 2105 ft, dr 4300 ft.

GAINES COUNTY—Amerada Pet. Corp.'s C. M. Armstrong 1, c nw nw sec 456, blk G, CCSD&RGNG Ry. sur, elev 3612 ft, top anhydrite 2107 ft, dr 3215 ft; R. A. Cox 1, nwc sec 380, blk G, CCSD&RGNG Ry. sur, rur; A. Fasken 1, c nw nw of W. T. Ry. sec 160, blk G, elev 3283 ft, top anhydrite 2130 ft, base salt 3088 ft, top Yates sand 3247 ft, top lime 4280 ft, dr 5205 ft, no shows of water; Florence Matthews 1, nec sec 417, blk G, CCSD&RGNG Ry. survey, elev 3557 ft, top anhydrite 2079 ft, salt series 2196-2819 ft, top brown lime 3930 ft, top solid lime 4250 ft, dr 4575 ft. Argo Oil Corp.'s E. H. Jones 1, c ne¼ PSL sec 2, blk A-7, elev 3669 ft, top anhydrite 2080 ft, salt series 2260-3025 ft, top Yates 3075 ft, dr 4265 ft. W. M. Blevins-Tom Sloan & Shell Pet. Corp.'s W. W. Barber 1, nw ne ne PSL sec 19, blk A-28, elev 3473 ft, top anhydrite 1580 ft, salt series 1660-2700 ft, top Yates 2825 ft, sulphur water 4725-4759 ft, to dd. Amon G. Carter et al's J. R. Sharp (Wasson) 2, swc PSL sec 47, blk A-X, elev 3535 ft, top anhydrite 2080 ft, dr 4470 ft. A. G. Carter-Continental Oil Co.'s G. M. Langdon 1, sw¼ PSL sec 44, blk A-X, elev 3547 ft, top anhydrite 2173 ft, base salt 2970 ft, top Yates 3020 ft, top lime 3970 ft, oil saturated lime 4894-4902 ft, cem 7-in cas 4902 ft. Continental Oil Co.'s E. H. Jones 1, c se ne PSL sec 22, blk A-7, elev 3650 ft, top anhydrite 2060 ft, base salt 3080 ft, top Yates 3140 ft, top lime 4020 ft, td 4959 ft, swabbed dry, used 1000 gals acid, shows little oil and gas; W. McCarty Moore 1, swc PSL sec 46, blk A-X, top anhydrite 2090 ft, dr 3210 ft. Phillips Pet. Co.'s A. G. Carter-Wasson 1, se se ne PSL sec 53, blk A-X, dr 268 ft. Phillips Pet. Co.-I.T.I. Oil Co.'s E. C. Brand 1, se se ne PSL sec 55, blk A-X, elev 3585 ft, top anhydrite 2140 ft, top salt 2245 ft, dr 3210 ft.

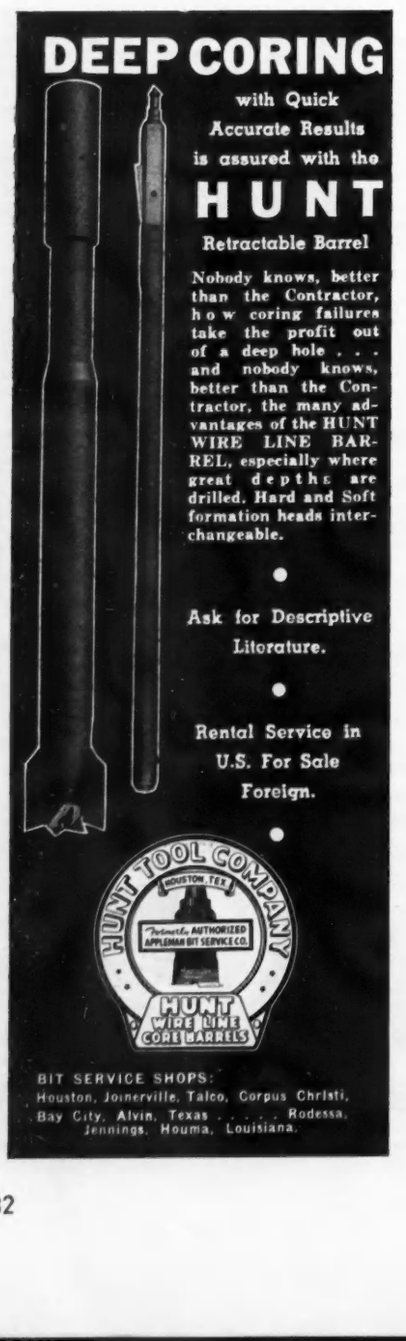
HOCKLEY COUNTY—Frank A. Bates et al's F. S. & A. L. Lockett 1, c of E-80-ac of n¼ of PSL sec 5, blk I, mim. R. F. Duggan & Loffland Bros. Co.'s Yellow House Land Co. 1, c labor 11, league 718, Capitol Synd. Lands-A. Taylor sur, elev 3517 ft, top anhydrite 1880 ft, rust at 4100 ft, dr plugs. Stanolind O&G Co.'s Alex Slaughter 1, c sw¼ labor 76, league 37, Zavalla C. S. Lands, elev 3518 ft, top anhydrite 2220 ft, dr 4680 ft.

LYNN COUNTY—R. L. Foree et al's C. O. Edwards 1, sec HE&WT Ry. sec 104, blk 9, lcn.

MARTIN COUNTY—Johnson & Robinson's O. B. Holt 1, c labor 20, league 319, Garza C. S. Lands, lcn.

TERRY COUNTY—H. B. Anthony-E. R. Rice & Illinois Oil Co.'s A. M. Brownfield 1, c nw¼ of E. L. & R. R. Co. sec 28, blk A-1, elev 3192 ft, top anhydrite 2236 ft, dr 3000 ft. Hugh Corrigan, A. W. Cherry et al (was W. L. Pickens et al's) J. B. Lewright 1, c ne ne PSL sec 1, blk C-37, elev 3185 ft, top anhydrite 2120 ft, top salt 2170 ft, top Yates 3110 ft, top brown lime 4275 ft, top solid lime 4470 ft, pb from 5133 ft to 4996 ft, dr out bridge. R. L. Foree et al's W. E. Pool 1, c ne¼ PSL sec 54, blk D-11, elev 3447 ft, top anhydrite 2418 ft, base salt 3103 ft, top Yates sand 3138 ft, first lime stringer 4165 ft, top big lime 4592 ft, cem cas 4830 ft, td 4847 ft, sd.

YOAKUM COUNTY—E. R. Bahan-R. R. Rhodes & J. E. Fitz-Patrick's L. B. Shook 1, c ne¼ sec 420, blk D, John Gibson sur, elev 3761 ft, top anhydrite 2340 ft, top Yates 3165 ft, first lime between 4570 and 4600 ft, free oil 5309-13 ft, and 5370-76 ft, testing. Bohago Oil Corp.-Bond Oil Corp.'s West 1, c se nw sec 606, blk D, J. H. Gibson sur, elev 3660 ft, top anhydrite 2230 ft, top Yates 3041 ft, dr 4410 ft. Denver Prod. & Ref. Co.'s J. A. Whittenburg Est. 1, c nw nw sec 831, blk D, J. H. Gibson sur, dr 3200 ft. Honolulu Oil Corp. et al's Ruth Bennett 1, nec sec 677, blk D, J. H. Gibson sur, elev 3567 ft, top anhydrite 2000 ft, dr 4900 ft. Magnolia's Mrs. M. E. Taylor 1, ne ne ne sec 201, blk D, J. H. Gibson sur, elev 3607 ft, top anhydrite 2325 ft, top Yates 3040 ft, trace gas 5093-95 ft, dr 5230 ft. Moore Bros. Corp. et al's Geo. Cleveland-Ohio 1, c ne ne sec 706, blk D, J. H. Gibson sur, mim. Siosi Oil Corp. et al's Ruth Benett 1, sw sw sw sec 631, blk D, rur. The Texas Co.'s W. F. Walker 1, c se se sec 794, blk D, J. H. Gibson sur, elev 3656 ft, top anhydrite 2114 ft, top Yates 2990 ft, top lime 4480 ft, dr 4600 ft. T. P. Coal & Oil Co.'s Mrs. Ruth Bennett 2, nwc sec 678, blk D, J. H. Gibson sur, elev 3566 ft, top anhydrite 2400 ft, lime pay 5226-5271 ft, shot 340 qts nitro 5126-71 ft, flowed 310 bbls oil 14 hrs, used 8000 gals acid, flowed 642 bbls initial.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EAST TEXAS BORDER COUNTIES

CASS COUNTY—G. H. Chambless' Collett 1, J. S. Smith sur, 7-in csg 5980 ft, testing, td 5990 ft.

HARRISON COUNTY—J. B. Bond's Martin 1, Martin sur, 16-in csg 80 ft. Highway Oil Co. of Texas' Mable George 1, J. S. Powell sur, claim so, arr set casing, td 2506 ft.

MARION COUNTY—Ark. La. Gas Co.'s Fant 1, L. P. Cadenhead sur, elev 366 ft, top red beds 3747 ft, topped anhydrite 5378 ft, dr 5402 ft. Emma Ford 1, L. P. Cadenhead sur, spd; Wood 1, J. C. Eaton sur, sd 2530 ft. Fohs Oil Co.'s Mary McReynolds 1, A. de los Santos Coy sur, elev 276 ft, cored so 6029-34 ft, woc, td 6029 ft. Mid-Continent Pet. Co.'s Sory 1, A. de los Santos Coy sur, completed, td 6101 ft; Sory 2, A. de los Santos Coy sur, rur. United's J. H. Hutchinson 1, A. de los Santos Coy sur, dr 4890 ft. Gulf's Lizzie Henderson 1, R. Bennington sur, rur. Shell's Henderson 1, R. Bennington sur, lcn. Holcomb & Thomasson's Hilloard & Womack 1, R. Bennington sur, mim.

PANOLA COUNTY—Danciger O&R Co.'s J. W. Tatum 1, Alfred Bissell sur, dr 2096 ft. Glassell & Glassell's Pierce & Chesbro 1, Julia Soape sur, sd 5881 ft. Magnolia Pet. Co.'s E. A. Hull 2, Thos. Applewhite sur, dr 7120 ft.

SHELBY COUNTY—Wm. Redditt's Pickering Lbr. Co. 1, Stephen English sur, elev 303 ft, si, td 4109 ft. Portex Oil Co.'s Pickering Lbr. Co. 3, A. Hanson sur, dr 1500 ft. Allen et al's George 1, C. C. Tutt sur, dk.

EAST TEXAS

ANDERSON COUNTY—Barnsdall Oil Co.'s H. C. Swanson 1 (243-ac), Richard Duty sur, ¼ mi ne Jarvis, elev 330 ft, Pecan chalk 3314-3630 ft, Austin chalk 4120-4264 ft, top Woodbine 4406 ft, top Georgetown lime 5215 ft, sd 5245 ft. Humble's Suie Hassell 1 (80-ac), Jas. Beard sur, 2 mi n Jarvis, rur for Trinity test. Roeser-Pendleton, Inc.'s V. W. Bowyer 3 (200-ac), E. Ritter sur, Cayuga field, elev 317 ft, top Woodbine 3991 ft, top Georgetown 4749 ft, top Paluxy 5929 ft, top Glen Rose 6166 ft, top anhydrite 7110 ft, base anhydrite 7478 ft, td 7676 ft, used 10,000 gals acid, tests little oil. J. McDowell, C. & G. Oil Co. et al's F. A. Newsom 1, (110-ac), T. C. Lively sur, mim.

BOWIE COUNTY—Fay T. Chew and Brassett's B. Barkinson 1 (90-ac), J. W. Parkman sur, 2½ mi n Leary, elev 312 ft, sd 2851 ft. Ferguson & Hill's A. Y. Breckenridge 1 (412-ac), Nancy Dycus sur, 4 mi w Texarkana, top Annona chalk 1308 ft, top Blossom sand 2063 ft, sd 2800 ft. Sutton & Hawkins' N. M. McDuffey-Harris 1 (389.45-ac) John Ball sur, 3 mi se New Boston, elev 333 ft, top Georgetown lime 2847 ft, top Paluxy 3350 ft, top anhydrite stringer 4495 ft, Massive anhydrite 4640-4825 ft, td 4924 ft, pb to 4724 ft, re-drl hole to 6010 ft, dry and abd. Woodley & Bentley's J. D. Lumpkin 1 (245-ac), John McDermott sur, 1¼ mi sw of Dalby Springs, elev 290 ft, Annona chalk 1665-2090 ft, pb fr 4404 ft to 1300 ft, dr by junk, coring 4715 ft.

CHEROKEE COUNTY—W. L. Stone et al's H. W. Acker 1, Acker sur, near Maydel, lcn.

COLLIN COUNTY—Foster Jones et al's Ann Sherley 1 (54.44-ac), Gwynn Morrison sur, ½ mi e Anna, top Paluxy 2123 ft, top first anhydrite 2725 ft, sd 3005 ft.

DELTA COUNTY—F. J. Estes et al's W. S. McGee 1 (207-ac), J. G. Oliver sur, 2 mi sw Klondike, elev 449 ft, top Georgetown 3305 ft, dry and abd 4001 ft.

ELLIS COUNTY—Gigantic Oil Co., Inc.'s C. H. Sullivan 1 (90 2/3-ac), Simon Garcia sur, 4 mi n Frost, reported show gas in Paluxy 3018-36 ft.

FREESTONE COUNTY—Holt, Young & Nannly's W. H. Chambers 1 (125-ac), W. D. Allison sur, 2¾ mi n Keechi, lcn for 5200 ft test. C. E. Rossiter et al's J. P. Fulton 1 (441-ac), J. P. Fulton sur, sd 956 ft. L. R. Stroud & C. A. Buzzard's Sneed 1, R. D. Sloan sur, 6 mi ne Fairfield, sd 341 ft.

HENDERSON COUNTY—Wm. McDougall, Tr. et al's Trinity Farm Securities Co.-R. M. Manning 1 (200-ac), H&TC Ry. sur, 4 mi s Malakoff, lcn. R. J. Paschall & H. M. Wilson's H. M. Wilson 1 (943-ac), Thomas Caro sur, elev 359 ft, top Pecan chalk 2300 ft, sd 2800 ft. Tidewater Associated-Seaboard & Humble's McElreath-Suggett 2-C (149-ac), W. P. Wyche sur, 1 mi nw Opelika, elev 452 ft, Pecan chalk 2638-2788 ft, Austin chalk 3750-4160 ft, top Woodbine series 4450 ft, top Georgetown 5070 ft, top Paluxy 6020 ft, coring 7160 ft. American Liberty Oil Co. et al's E. B. LaRue-Johnson 1, Phillip Jackson sur, blk 11, 2 mi w LaRue, lcn for Trinity test.

HOUSTON COUNTY — American Liberty Oil Co. et al's W. L. Moody 1 (55-ac), S. C. Parker sur, 2½ mi nw Grapeland, elev 451 ft, Pecan chalk 4549-4847 ft, top Austin chalk 5576-5886 ft, top Woodbine 5988 ft, pb fr sw at 6169 ft to 6010 ft completed, 40,000,000 ft, gas with distillate.

HUNT COUNTY—Stanolind O&G Co. et al's Jessie P. Hawks 1 (110-ac), Robt. Ragsdale sur, 1½ mi w Campbell, elev 566 ft, cut thru fault 1275 ft, top Woodbine 2880 ft, top Georgetown lime 3730 ft, top Paluxy series 4388 ft, top Glen Rose 4819 ft, anhydrite 5335-5560 ft, top Travis Peak 5965 ft, td 6570 ft, fsh. Bauersfeld & Aue, Inc. (was Texola Land Corp.'s) J. M. Goin 1 (250-ac), Jas. Merrick sur, 2 mi sw Wolfe City, elev 606 ft, dr 1000 ft.

KAUFMAN COUNTY—J. M. Scott & J. B. Woodside's Wood & Temple Nash 1 (80-ac), Juan Cortez sur, 1 mi e Scurry, elev 401 ft, Gober chalk 1300-1400 ft, top Woodbine 2270 ft, top Georgetown lime 2849 ft, sd 2920 ft.

LAMAR COUNTY—Blackman & H. W. McGee's J. M. Duck 1 (75-ac), J. C. Lamb sur, near Powderly, dr 1030 ft. A. W. Walker, Tr., and J. H. Blackburn's R. L. Rose-Federal Land Bank 1 (160-ac), A. N. Nowell sur, 1 mi e Faught, elev 501 ft, sp and sd.

LEON COUNTY—H. M. Ogg et al's O. Wiley 1-B (144-ac), E. Devinney sur, 1 mi w Buffalo, sd 2000 ft.

LIMESTONE COUNTY—Pure Oil Co.'s W. B. Kendrick 16-T (96-ac), 3 mi w Mexia, Mexia field Trinity test, elev 508 ft, Austin chalk 2211-2522 ft, top Woodbine 2896 ft, top Georgetown lime 3365 ft, top first Glen Rose 4270 ft, top broken anhydrite 5132 ft, top Travis Peak 5656 ft, fsh 300 ft drill pipe 6383 ft.

MORRIS COUNTY—Joiner Oil Corp.'s Morris Sheppard 1, MEP&P Ry. sur, 3 mi nw Naples, elev 315 ft, rur.

NAVARRO COUNTY—Tom Sharp et al's E. B. McDowell 1 (65-ac), T. J. Jordan sur, ½ mi s Bazette, dr 500 ft.

RED RIVE RCOUNTY—Texas Trading Co. Inc.'s Southern Pine Lumber Co. 1 (102-ac), D. D. Bruton sur, 12 mi n Clarksville, cem sur cas and sd.

RUSK COUNTY—Barnett Pet. Corp. (was John G. Mayo et al's) Harrison-S. C. Sanford 1 (161-ac), Wm. A. Corder sur, 10 mi e Mount Enterprise, Trinity test, elev 252 ft, Pecan chalk 2260-2650 ft, top Georgetown lime 3275 ft, first anhydrite 5458 ft, massive anhydrite 5871 ft, dr 6133 ft. Gen'l. Crude Oil Co.'s Bivens Bros 1 (500-ac), R. Williamson sur, 6

mi n Tatum, elev 259 ft, dr 5115 ft. Nivla Oil Corp.'s Citizens Nat'l Bank 1 (50-ac), M. D. Carmel sur, 2½ mi se Henderson, elev 471 ft, Pecan chalk 2440-2800 ft, top Austin chalk 3175 ft, top Georgetown lime 3340 ft, dr 4315 ft. J. W. Shipman et al's Citizens Na'l. Bank-L. T. Burton 1 (125-ac), J. J. Y'Barbo sur, 4 mi ne Henderson, elev 432 ft, base Georgetown lime 3676 ft, sd 4340 ft.

TITUS COUNTY—J. N. Buchanan and G. E. McGrede's Mrs. Cal Russell 1, J. M. G. Rutherford sur, 8 mi w Dangerfield, sd 2200 ft. Magnolia's J. A. Chapman 2 (341¼-ac), Geo. Dyer sur, east edge Talco field, elev 329 ft, trace oil in Paluxy 4232 ft, top anhydrite 5350 ft, top 2nd Glen Rose 5588 ft, and water sand 5643-61 ft, pb to 5608 ft, used acid and tested little oil with salt water, dry and abd.

UPSHUR COUNTY—F. W. Maddox et al's S. T. Buie 1 (158-ac), Jas M. Dunn sur, 1½ mi n Jamestown, elev 298 ft, Pecan chalk 2405-2940 ft, top Austin chalk 3629 ft, top Woodbine 3717 ft, td 3751 ft, testing.

VAN ZANDT COUNTY — Humble O&R Co.'s L. K. Riggs 1-A (74.2-ac), Wm. Daniel sur, ne edge Van field, Trinity test, elev 463 ft, Pecan chalk 1964-2090 ft, Austin chalk 2805-3048 ft, top Georgetown lime 3675 ft, cut fault 4350 ft, 1st anhydrite 4860 ft, top massive anhydrite 5100 ft. ton Travis Peak 6133 ft, dry and abd 6325 ft. Glenn et al's E. Core 1, H. Ball sur, 3 mi n Edom, dk. Spratt Oil Co. (was Stroud & E. N. Lowe's) P. L. McNeill 1 (104-ac), J. W. Guest sur, 4 mi n Ben Wheeler, elev 510 ft, sd 684 ft.

SOUTH TEXAS

SAN ANTONIO DISTRICT

ATASCOSA COUNTY—Priest et al's Birdwell 1, J. P. Gorman sur, sd at 1725 ft.

BASTROP COUNTY—Hantho-Nelson's K. M. Litton 1, Addison Litton sur, resume drilling after spudding.

BEXAR COUNTY—Algra Oil Co.'s Edward G. Peters 1, Miguel Gotari sur, changed contractor, rotary ready to dd, will start soon. American Gas Co.'s Oliver 5, M. F. Rodriguez sur, dr ahead at 3485 ft, ran about 40 ft more pipe, cleaned out. Dewey et al's C. A. Weeber 1, Juan Montes sur, sd at 21 ft. Edna May Oil Co.'s Mrs. C. N. Cassin 1, Fernando Rodriguez sur, dr plugs 1138 ft. L. K. Oil Corp.'s William A. Russell 2, Fernando Rodriguez sur, Bitter 2, Jose M. Baerrera sur, prep to mi.

BLANCO COUNTY—D. N. Johnson's W. D. Glasscock 1, W. D. Stannock sur, sp and sd. H. T. Roe's Polk Morrisey 4, Thos. H. Webb sur, dr 245 ft, will set 8 in at 260 ft.

CALDWELL COUNTY—B. C. Armstrong et al's Wilson Bell 1, Solomon Seal sur, dr in boulders 515 ft. H. J. Baker's F. Smith 1, R. Davidson sur, dr in Georgetown at 3470 ft, topped at 3350 ft. R. T. Belcher's Mrs. G. Moody 1, Solomon Seal sur, dr sh 450 ft. Chiquita Oil Co.'s Chas. P. Ross 1, Samuel Shupe sur, ru. Fain Gillock's Mrs. J. P. Walker 1, A. Floyd sur, sd 20 ft. W. E. Housel et al's M. C. Driscoll 1, James Berry sur, abnd 1344 ft. J. O. Mack's B. Withers 1, W. House sur, dr in Georgetown 1660 ft. Richardson Pet. Co.'s J. M. Trammell 1, E. Berry sur, sd 2210 ft. Siznod Oil Corp.'s A. B. Reed 1, Miles G. Dyke sur, dr 1125 ft. Spokane Oklahoma Oil & Gas Co.'s K. Dougherty 1, J. Tyler sur, dr in Taylor sh 1960 ft. Stapper Pet. Co.'s M. August 1, A. Floyd sur, prep to mi. Mrs. M. R. Tinkle's S. M. Blackwell 1, Richard Miller sur, dr 1800 ft. F. R. Williams' H. L. Rodenberg 1, James Berry sur, making est 10 to 15 bbls per day, td 2010 ft.

COMAL COUNTY—Fohn R. Yates' Erhard Heidrick 1, A. M. Holbrook sur, mir.

DIMMITT COUNTY—Wilcox Oil & Gas Co.'s Light Ranch 1, I&GN sur, D&A at 8048 ft.

EDWARDS COUNTY—Amon G. Carter et al's Frank J. Sweeten Ranch 1, GC&SF sur, sd for rotary 710 ft.

FRIO COUNTY—Amerada Pet. Co.'s Mrs. D. D. Harrigan 1, Salvador Flores sur, swabbing in Austin ch 6410 ft. H. A. Pagenkopf and L. C. Jamieson's Blackaller Est. 1, James Gourley sur, coring below 2800 ft for Buda.

GONZALES COUNTY—Canoe Creek Oil Co.'s W. L. Bolts 1, W. A. Matthews sur, ru.

GUADALUPE COUNTY—Ralph E. Fair, Inc.'s Fritz E. Hemple 1, G. W. Williams sur, abnd 2240 ft. Galtex Pet. Corp.'s Paul Knodel 1, Green Dewitt sur, lcn. Josey Oil Corp. et al's J. Seeligman 1, J. W. Williamson sur, dk. Kennedy & Crowley's Gus Jahns 1, Jose K. Davis sur, still testing on pump 2507 ft. Dave T. Mulholland's T. W. Jahns 1, J. K. Davis sur, sp in.

HAYS COUNTY — Mallory-Holcomb & Nance's J. A. Hudenrich 1, W. Hemphill sur, base ch 450 ft, set 4 in csg at 650 ft, sd.

KENDALL COUNTY—J. E. Landon and C. A. Sidensticker 1, sur 257, dr 100 ft.

LEE COUNTY—Eleousa Oil Co.'s Ira Sanders 1, J. Von Roeder sur, sd 3675 ft.

MAVERICK COUNTY — Rio Dev. Co.'s State Bank & Trust Co. 4, sur 1, lcn; P. W. Thompson Est. 1, sur 5, ru.

MILAM COUNTY—Kingdorr Exploration Co.'s J. C. White et al 1, Bynum Wickson sur, dr 4300 ft. Minerva Ref. Co.'s Shelton Est. 3, Wm. Allen sur, ru and sd.

WILSON COUNTY—F. H. Eckert & Sons' Federal Land Bank 1, Rafael Salinas sur, dr 1100 ft. Maryland Oil Corp. et al's Cynthia N. Tremmell 1, M. May sur, reinstated, set csg 3140 ft, will test sand in Navarro about 3115 ft, show some oil in mud while circulating to run pipe, 5 in csg 3140 ft, td 5611 ft. R. C. Stanley's E. M. Hierholzer 2, R. Salina sur, set liner perforated 1025½ ft-1027 ft, preparing to put on pump, td 1031½ ft.

CORPUS CHRISTI DISTRICT

ARANSAS COUNTY—Barnsdall Oil Co.'s Kate Edwards 1-A, Wm. Lewis sur, dr 0209 ft.

BROOKS COUNTY—Standard Oil Co. of Texas' Mestina Oil and Gas Co. 1, R. G. Salinas sur, lost swab in hole, went in with side-wall packer on tubing to run dst, seat approximately 5140 ft, rocked up 61 lbs. pressure in 5 minutes, packer stuck, now going in with cutting tool to cut off tubing, td 6786 ft; Mestina O&G Co. 8, La Mestina y Gonzalena gr, set sur csg.

CAMERON COUNTY—Ruez-Morton, Inc.'s United Land Irr. Co. 1, lot 7, blk 402, El Jardin sub, re-dr 6000 ft. Stapper Pet. Corp.'s Port Isabell Irr. Co. 1, blk 17, Port Isabell Irr. Co., abnd 7777 ft.

GOLIAD COUNTY—Goliad Oil Co.'s S. E. Cole 1-A, lot 33, range 4, dr 5451 ft.

HIDALGO COUNTY—Felmont Oil Corp. et al's Mayer & Weill 1, por 47, mim. Dayle L. Smith Oil Co.'s Fairbanks & Young 1, blk 14, por 46, coring 2280 ft. Y. & B. Oil Co.'s Waite Brothers 1, sh 382, Los Ejidos gr, ru.

JACKSON COUNTY—George J. Greer et al's J. R. Davis 1, D. H. Hoffman sur, dr 6530 ft.

JIM WELLS COUNTY—La Jita Corp.'s (John F. Camp Dr. Co.), W. E. Pope 2-B, sec 13, Richard King Farm Lots, abnd 6261 ft. Magnolia Pet. Co. et al's A. A. Seeligson 7, Los Jaboncillos sur, set 9⅝ in csg 6160 ft, no prod test, csg, just protection so test can go to 8000 ft, td in sandy section 6118 ft, td 6162 ft. Memphis Natural Gas Co. and Smith Drilling Co.'s W. D. Wade 1, blk B, Bode subd, D&A after running electric formation tester 5405 ft.

KARNES COUNTY — Kinero Oil & Gas Co.'s H. Koehler 1, Victor Blanco gr, sp. Pettus O&R Co.'s Mrs. R. A. McKinney 1-A, R. C. Ballard sur, dr 2875 ft.

KLEBERG COUNTY—W. L. Hinds Co.'s D. M. Murchison 1, J. J. McRoberts blk, dr 2200 ft.

LIVE OAK COUNTY—W. M. Brown's W. Moozygambe 1, George West sub, lcn. Charles Hanna's C. H. Wedding 1, Brigida Hanghy sur, lcn. Henshaw Bros. and Walter C. Nelson's Alfred Wesch 1, R. Triplett sur, dr 1490 ft. Loma Oil Co.'s S. A. Joint Stock Land Bank 1, John Turner sur, still woc. W. C. McBride, Inc.'s A. Sanger 1, GC&SG sur, dr 2000 ft. Ranco Oil Corp.'s Fee 1, J. Poitevent sur, mi Yegua and test.

NUECES COUNTY—Fain Gillock et al's Robert Poenisch 1, lot 11 sec 32, test will not be drilled unless No. 2 is a producer. Fain Gillock et al's Robert Poenisch 2, lots 7 and 8, blk 32, Flour Bluff & Encinal Garden Tracts, dr 3200 ft. Southern Minerals Corp.'s (W. L. Hinds) Lucy J. Rivers 1, sec 301, Bishop subd, mi heavier rig to dd, will also recore and test the 5800-5900 ft section, td 6015 ft. Seaboard Oil Corp. of Delaware's J. O. Chapman et al 1-C, Laureles Farm tr, El Rincon de Corpus Christi gr, cor 5795 ft; Ed. Jurica 1, W. Robertson Farm Tracts, blk 32, washing down to dd, td 5554 ft. Southern Minerals Corp.'s H. G. Yakey 1, sec 38, King Ranch subd, mir. United Prod. Corp.'s T. S. Schroeder 1, Andres Fernandes de la Fuentes sur, dr 4285 ft. Sam E. Wilson, Jr.'s J. F. Herold 1, lot 2, sec 6, Bohemian Colony subd, comp drk and pits and laying wtr line.

REFUGIO COUNTY—Conroe Dr. Co.'s (J. V. Chew & O. V. McIntyre), F. E. Kloessel 1, sec 11, Bonnie View Ranch subd, sp. Edwin M. Jones' Ben Shelton 1, Refugio Town gr, dr 7706 ft. Randon Oil Co. & American Liberty Co.'s J. Vincent 1, CEIP&M sur No. 41, sd contract depth, ran electric formation tester, may deepen to Cockfield about 2000 ft, deeper, td 6014 ft. United Prod. Co.'s J. J. O'Brien 12, Refugio Town Tracts, sd 9225 ft. Wynne Drilling Co.'s J. A. Lambert 1, James Power and James Hewitson sur, ru.

SAN PATRICIO COUNTY—Buckingham Oil Co.'s Jean Davis (McCampbell) 1-C, sec 27, Peterson subd, dr 6750 ft. Danrey Oil Co.'s Jean Davis 1, Wm. Boyd sur, dr 6135 ft. Eleanor Oil Co.'s J. F. Green Est. 1, T. T.

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No. 6519—Angle, cast carbon steel body and bonnet, EValloy swivel plug seat and disk.

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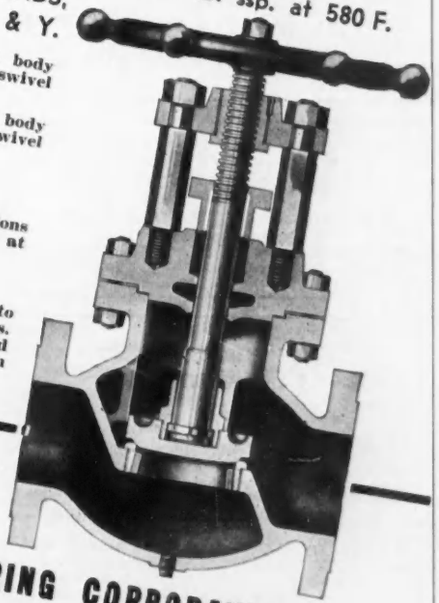
Slanting diaphragms minimize resistance to flow. Port areas equal to full pipe areas. ASA standard flanges with 1/16" raised faces. Quick delivery from large Houston stocks.



No. 6518—Flanged End.

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Williamson sur, sd 7305 ft. Humble Oil & Refining Co.'s John S. McCampbell 1, R. Martinez sur, hard gas sand 7067-72 ft, ran 2 dst, both failed, running third sandy sh 72-81 with oil odor, td 7081 ft. Plymouth Oil Co.'s J. F. Odem 1-A, Archibald Herron sur, prep to set whipstock to sdtr stuck dr pipe, td 5080 ft. F. P. Schwab's H. A. Smith 1, Cubage & Miller subd O'Connor ranch, sp. Wellington Oil Co.'s James F. Welder 1-B, Cubage & Miller subd, Julian de la Garza gr, fshg 5379 ft.

VICTORIA COUNTY—Magnolia Pet. Co.'s Mrs. Meta Beck 1, T&NO RR sur No. 1, sd 4078 ft. Transwestern Oil Co.'s A. M. McFaddin 3, J. Viarin sur, comp 50 mcf gas, tp 2000 lbs, cp 1950 lbs.

WILLACY COUNTY — Shell Pet. Co.'s Yturria Land and C. Co. 1, sh 64, San Juan de Carritos gr, swabbed down to 5100 ft, no show, td 10,286 ft.

LAREDO DISTRICT

DUVAL COUNTY—Conservative Oil Co.'s DCRC 1, sur 47, sp. Hiawatha Oil & Gas Co.'s M. M. Miller 2, blk 24, Ball subd, set csg, waiting on cement, cored sand 5854-66 ft, 7 inch casing 5866 ft, td 5866 ft; Southland Life Insurance 3, sec 15, Ball Ranch subd, Santos Flores gr, coring 5800 ft, still no shows. John H. Hougen, Trustee's W. H. Patton, Trustee, 1, sur 148, set 10 in csg at 203 ft, woc, td 203 ft. King Dr. Co.'s Atlee Parr 1, San Andres gr, cement 5½ in csg 5970 ft, will perf in sand 5933-50 ft, td 6531 ft. Loakhart Bros.' Atlee Parr 1, sec 277, dr 3259 ft. Magnolia Pet. Co.'s DCRC 2, sur 58, dr 2510 ft. Navarro Oil Co.'s E .M. Rossi 1, sec 11, swabbing in sand 5332-42 ft, td 6179 ft. Parr Oil Co.'s W. W. Meek 1, sur 212, D&A at 2968 ft. Penn Palangana Oil Co. et al's C. K. Gravis 1, sec 254, stdg 5236 ft. Reynosa Oil Co.'s W. R. Peters 1, sur 37, lcn. Standard Oil Co. of Kansas' Mabel Rossi, blk 10, Sweden subd, completing 4797 ft; V. L. Rossi 1-A, Santos Flores gr, sec 19, Sweden subd, lcn. Standard Oil Co. of Texas' Gruy Est. 3, Margaret E. Gussett sur, clearing lcn and digging pits. Woodley Pet. Co.'s F. Vaello Puig 1, San Andres gr, ru.

JIM HOGG COUNTY—Henry M. Brown, Trustee's Sylvester Gutierrez et al 1, sur 579, sp.

McMULLEN COUNTY—Edwards & Zoch's Two Rivers Ranch 1, sec 60, Two Rivers Ranch, Jerry Scanlon sur, dr 1395 ft. Harvey & Henderson's Nueces Land & Livestock Co. 1, sec 105, BS&F sur, D&A 2000 ft. W. L. Hinds' Douglas W. Rhodes 1, H. Nadler sur, sd for pump repairs, td 945 ft. Howell Oil Co.'s Kate Martin 1, D. Easterpri sur No. 213, setting csg to test Yegua sand 1200-14 ft, td 3510 ft. Edwin M. Jones' Harry Ezzell 6, C. O. Ragland sur, dr 1850 ft. J. T. Lanier's E. R. Hagist 1, sur 481, sd 1695 ft. Rowan & Nichol's Douglas W. Rhodes 1, Lowe sur, dr 1925 ft. V. G. Schimmell et al's E. R. Hagist 2, R. W. Mills sur, ru. C. C. Shumway et al's Shiner Ranch 10, sec 51, testing 1584 ft. Smith & Story's A. J. McKean Sr. 1, sec 200, M. R. Vela sur, 1765 ft, abnd. E. P. Tinney's Jerry Rutherford 1, blk 17, Two Rivers Ranch subd, sp and sd.

STARR COUNTY — Calderoni-James-Follette's Francisco Rodriguez 1, blk 3, sh 56, por 80, J. of Camargo, mi larger rig, td 150 ft. John H. Clopton et al's Dionicio Tijerina 4, blk 12, sh 14-C, por 80, J. of Camargo, reinstated, dr 1900 ft. Cook, Maris, Arnold's Starr County Cattle Co. 2, blk 23, Cook, Maris, Arnold sur, por 89, temp abnd, td 2465 ft. Danrey Oil Co.'s Cayetano Ramos 2, sur 149, dr 310 ft. G. E. Dodds, Trustee's Rosario Perez 1, por 83, J. of Camargo, prep to sp. Gilcrease Oil Co.'s DeCastillo 1, por 77, center of lot 9 Walker subd of sh, dr 1200 ft. Gilcrease Oil Co.'s C. M. DeCastillo 2, blk 11, Walker subd, sh 7-D, por 77, sp. E. A. Graham and King-Wood Oil Co.'s Yturria Land & Livestock Co. 1, por 38, dr plugs, will perf, td 3039 ft. K. E. Merren's Starr County Cattle Co. 1-A, showing heavy gas pres, lots gas and spraying about 1½ bbls per hour of distillate, 5/32 inch ch, td 5418 ft. Henry Mode et al's Mrs. Kelsey Bass 1, blk 7 Kelsey Bass subd, por 86 and 87 in por 87, temp abnd, td 3507 ft. Palmetta Oil Co.'s (Carter & Stiernberg) Quirino Vela 1, por 85, abnd 1840 ft. Palmetto Oil Co.'s (Carter & Stiernberg) Quirino Vela 2, D&A, no sand, td 1820 ft. The Texas Co.'s A. V. Guerra 6-A, Juris. of Mier, por 67, dr 2645 ft. Transwestern Oil Corp.'s T. B. Slick School 1, sur 266, sp.

WEBB COUNTY—Eugene Garner, Jr.'s Saldivar 2, sur 657, oil rose 200 ft, now fsh for for liner, td 1000 ft; R. R. Saldivar 3, sur 657, lcn. O. W. Killam's A. M. Bruni Est. 2, blk 83, Borrego gr, lcn; D. G. Garcia 7, sur 786, dr 1800 ft. Lutex Oil Co.'s Lone Star Con. Co. 2-A, por 12, of Lutex subd, cor to run electric formation tester at 3500 ft, td 3490 ft. J. W. Magee's E. Garcia 1, blk 21, Henry James subd, wo wtr, 40 ft. Paul Meaders et al's Garcia & Villareal 1, blk 5, sec 338, lcn abnd. J. R. B. Moore's Maria G. Martin 1, sur 458, ru. Howard Nessley's A. M. Bruni Est. 3, sur 449, lcn for Cole sand test.

ZAPATA COUNTY—Allison & Abrams' S. Vela 1, sur 259, dr 1030 ft. O. W. Killam's A. M. Bruni Est. 1, El Ranchito Pasture, J. V. Borrego gr, blk 83, Killam sub, sand 1490-1510 ft, showed oil on ditch, td 1510 ft, coring deeper. Eugene Mays et al's Adela G. de Flores 1, blk 198, Dorothy subd, mim. J. O. Sheffield's C. H. Buck 1, blk 15, J. O. Sheffield sub, sur 273, stdg 2238 ft.

TEXAS GULF COAST

BRAZORIA COUNTY—Jack Frazier's Temple Lbr. Co. 1, e of Bonney, H&TB sec 25, lcn. Humble's Munson Estate 1, e of East Columbia, S. Carter sur, lcn. Ohio Oil Co.'s Kemper 1, Chocolate Bayou area, H&TB sec 33, dk. Texas Gulf Producing Co.'s Adams 1, Chocolate Bayou area, H&TB No. 40, roads. Pure's Slade 1, Peach Point area, S. F. Austin sur, setting seven-inch casg 8353 ft.

CHAMBERS COUNTY — David B. McDaniel's Barrow 1, nw of Anahuac, Luke Bryan sur, woc 1030 ft.

COLORADO COUNTY — Coyle-Concord's Powell 3-B, Garwood area, I&GN sec 45, abn 6170 ft.

FT. BEND COUNTY—Research Inc.'s J. M. Moore 1, ne of Orchard, S. Kennedy sur, dr rock 5015 ft.

HARRIS COUNTY—Geo. Anderson et al's Fisher 1, Cedar Bayou area, J. Jams sur, ru. Superior's Butler 1, Bammel area, J. Ehrhardt sur, dr sand 9868 ft. West Production Co.'s Underwood 1, nw of La Porte, N. Clopper sur, dr shale 1578 ft.

LIBERTY COUNTY—O. C. Garvey's Weaver 1, nw of Cleveland, J. Devers sur, dk. J. G. Mayo et al's Gibbs Brothers 1, ne of Davis Hill, J. D. Martinez sur, sd 30 ft.

MATAGORDA COUNTY — Continental's Hawkins 2, Sheppard Mott area, D. McCarthy sur, dr cement 5835 ft. Royal Oil Co.'s Ewing 1, Sugar Valley area, A. S. Sojourner sur, coring shale 8539 ft.

NEWTON COUNTY—Houston Oil Co. et al's Sabine Tram 1, Bunker Hill prospect, H. & T. C. sec 35, dr shale 3187 ft.

POLK COUNTY—H. E. Williams & Thompson's Carter Brothers 1, nw of Segno, H. W. Augustine sur, ru.

UTAH

GRAND COUNTY—Cane Creek Oil Co.'s Government 1, nw sw 31-26s-21e, dr 259 ft.

WYOMING

BIG HORN COUNTY—Big Horn Petroleum Trust Co.'s Parker 1, csw sw 23-49n-89w, abd 1440 ft. Wood Callahan Oil Co., Ltd.'s Evans 1, ne ne nw 12-49n-91w, woc 2152 ft around 8⅝ in, top of Madison 2150 ft.

CARBON COUNTY—Ohio's Wyoming Oil & Gas Co. 1, se sw 29-27n-89w, dr 620 ft.

PARK COUNTY—General Petroleum Corp.'s Government 1, nw nw nw 33-47n-100w, has cleaned out damaged hole and cemented, drilling cement and will re-run hole to bottom at 5996 ft, to test.

PLATTE COUNTY—Dividend Oil & Refiners, Inc. 1, csl nw sw 17-24n-66w, fsg 2385 ft.

SWEETWATER COUNTY—Mountain Fuel Supply Co.'s Williams 1-A, cne ne 5-12n-95w, dr by tools at 354 ft; Williams 1, 400 ft south of 1-A, ru.

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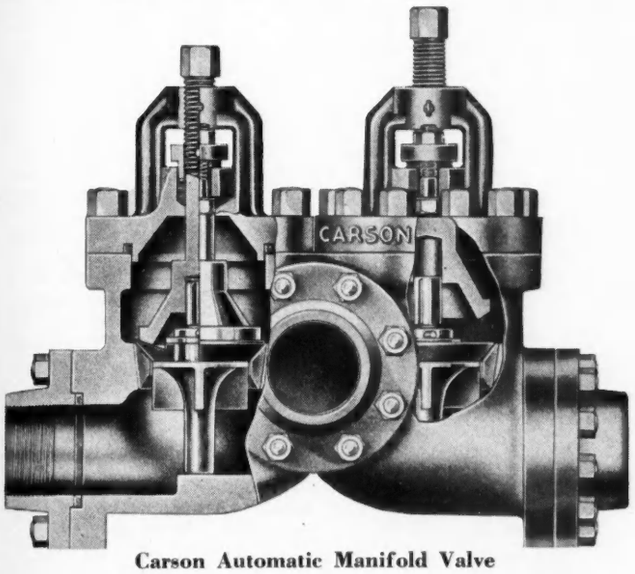
AUTOMATIC MANIFOLD VALVE

Carson Machine & Supply Company

Carson Machine & Supply Company, Oklahoma City, Oklahoma, is manufacturing a new, improved, controlled-automatic manifold valve, said to be a positive seal against the pump pressure whenever desired. By closing the screw down against the automatic valve, the manufacturer says, it is possible to put any desired pressure on the jet line for washing slush pits, or for other purposes without allowing the mud to go through the manifold valve. The seal is tested against 2000 pounds pressure, and the valve is automatic with flow of mud.



Carson Automatic Manifold Valve

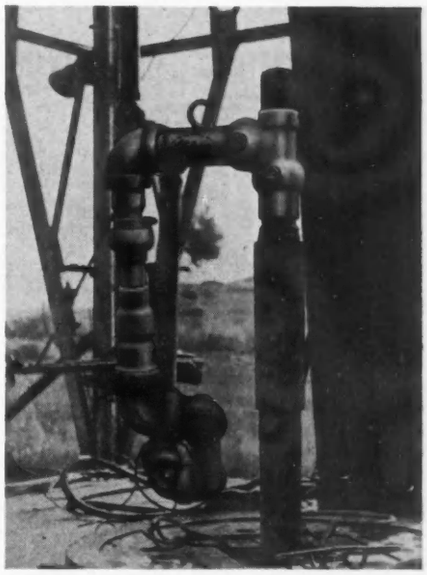
Use of this valve eliminates the necessity of using additional valves in the mud line between the manifold valve and the pumps. This new feature will fit any Carson Automatic Manifold or "T" valve already in use. All that is necessary is to order the new valve cap assembly, available through any Carson store, or through supply stores.

SWIVEL

Chiksan Oil Tool Company

Chiksan Oil Tool Company, Fullerton, California, announces a new swivel which is an adaptation of the Chiksan joint, and is designed to connect into the top of drill pipe or tubing, providing continuous 360 degree rotation in both vertical and horizontal planes. It has a tee connection cast into the body which provides an opening through which wire-line core barrels, survey instruments, etc., may be dropped into or removed from the hole through the drill pipe while maintaining complete circulation and rotation.

The uses of the "Poor Boy's" swivel, according to the makers, are many. For instance, it is used as an auxiliary swivel to maintain rotation and circulation through the drill pipe while repairs are made on regular swivels, drilling lines, traveling blocks, etc., without coming out of the hole. In running wire-line core barrels, survey instruments, etc., in high pressure wells, its use eliminates danger of sticking the pipe, since it permits continuous rotation and circulation to be maintained while the run is being made. In this type of work it is used in combination with any type of packing gland to seal the wire line and prevent fluid leakage at this point. Cementing jobs, especially squeeze jobs through tubing, can be executed with greater efficiency and safety by incorporating a "Poor Boy's" swivel in the top of the tubing as this swivel has a safe working pressure in excess of 3000 pounds.



Chiksan Swivel

BAND-WHEEL POWER

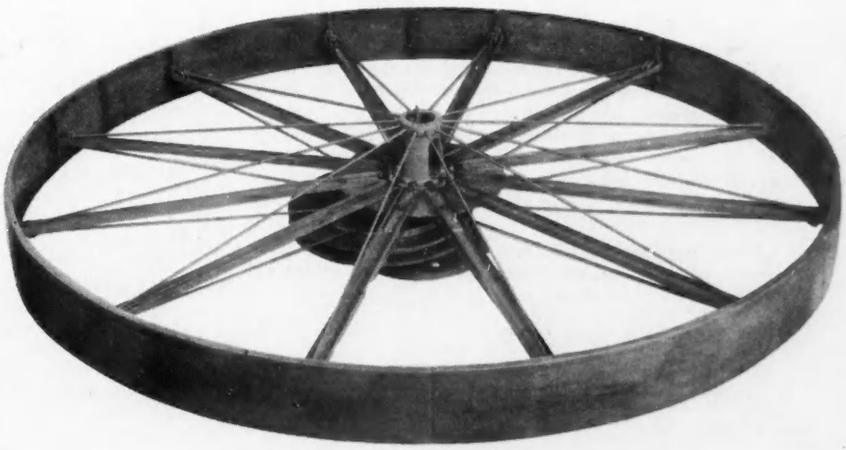
The National Supply Company

In the design of the National No. 14-D Pumping Power, recently announced by The National Supply Company, Toledo, Ohio, full advantage has been taken of experience with both hand-wheel and geared powers.

One important result is a completely enclosed dust-proof construction. Every moving joint is protected by a felt oil seal operating against machined surfaces. Combined with National's patented circulating flood oiling system, a standard of lubrication efficiency equalling geared powers is attained.

The distinct advantage of the single-crank design on geared powers has prompted the use of the single eccentric construction resulting in certain very definite benefits. The problem of good balance on the eccentric strap has been simplified and the loading on the spindle reduced. Furthermore, it has been possible to concentrate the load much closer to the base.

The eccentric and hub assembly is carried on two large capacity Timken bearings. The eccentric strap has unusual bearing width, and is made with a pin hole circle for connections of a type new to band wheel powers. There is no



National Band Wheel Power

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By

HOLLIS P. PORTER

Member of

American Society of Mechanical Engineers
American Petroleum Institute.

This work grew out of a demand for some source of definition for the terms used by the petroleum industry. It contains over 3,000 definitions of words used constantly by all phases of the petroleum industry. It was published in 1936, and has found its way into engineering departments, legal departments and land departments of producing concerns, as well as to the desks of executives of the petroleum industry.

Manufacturers also find it valuable for reference. Advertising agencies find it a valuable addition to the library.

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wear on the eccentric strap from the connections. This comes entirely on a bronze bushing of generous size in the connection itself which is provided with an unfailing film of lubricant from a covered pocket.

The band wheel itself is a new development. It is entirely of welded construction with no projecting bolts or rivets on the belt face. Rim sections are rolled and are permanently diametrically correct. The entire wheel is assembled on a large steel driving plate in a form of a circular disc which is a part of a rigid assembly of rotating parts along with the hub and eccentric. The wheel is easily aligned and quickly erected.

The rated capacity of the National 14-D Power is 80 horsepower at 20 s.p.m. The diameter of the band wheel is 24 feet, with a face of 24 inches. The regular eccentric stroke is 30 inches with optional strokes of 24- and 36-inch.

ROTARY MACHINE

The International Derrick & Equipment Company

The International Derrick & Equipment Company, Columbus, Ohio, announces a new 27½-inch oil-bath rotary which incorporates modern design plus several outstanding features.

The construction features are as follows:

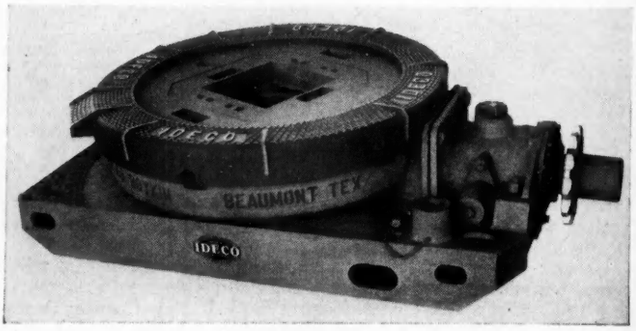
The rotary base and all heavily stressed castings are of chrome-nickel alloy steel.

The rotary is equipped with a low, perfectly flat table which is completely encircled by a heavy cast-steel guard having a non-skid surface.

The main bearing races are hardened by a special process to over 600 Brinnell.

The pinion shaft is mounted in two self-aligning S. K. F. combination radial and thrust bearings, which allow a universal movement of the pinion shaft.

The pinion shaft drive sprocket is of chrome-nickel heat-treated steel with machine-cut teeth.



IDECO Rotary

The lubrication is fully enclosed oil-bath. The bearings and gears are sealed to insure no contamination of the lubricant by mud or other foreign substances. Any matter which might get into the oil will be carried to a deep oil sump and filtered out. The pinion shaft bearings are enclosed in a "capsule" entirely separate from the housing of the table bearing, and each of these has its own separate oil reservoir.

This rotary has a dead load capacity of 300 tons, which allows it to easily handle the maximum depth of present day drilling.

WIRE LINE CORE DRILL AND DRILLING ASSEMBLY

Elliott Core Drilling Company

Elliott Core Drilling Company, 4731 East 52nd Drive, Los Angeles, California, announces a new wire line core drill and drilling assembly for which the manufacturer claims three outstanding features which coordinate to cut faster hole and recover an increased percentage of clean, true core with minimum difficulty and expense, viz: (1) the inner barrels valve creates a suction on the inner barrel to aid entry of unconsolidated cores; (2) the improved cutter heads discharge the circulation closer to the bottom of the hole while protecting the core from circulation wash, resulting in faster drilling and more hole before becoming dull, and (3) the inner barrel requires no driving mechanism and embodies no moving parts. The equipment has been thoroughly field tested.

This Week with the Industry's EQUIPMENT SUPPLIERS

L. L. Thomas Joins Bradford Organization

L. L. Thomas, M. E., is now connected with Bradford Motor Works as field engineer, and will make his headquarters in the Tulsa office of the company. Thomas is a graduate of the University of Pittsburgh, and for the past several years has been associated with the Gulf Research Laboratories at Pittsburgh.

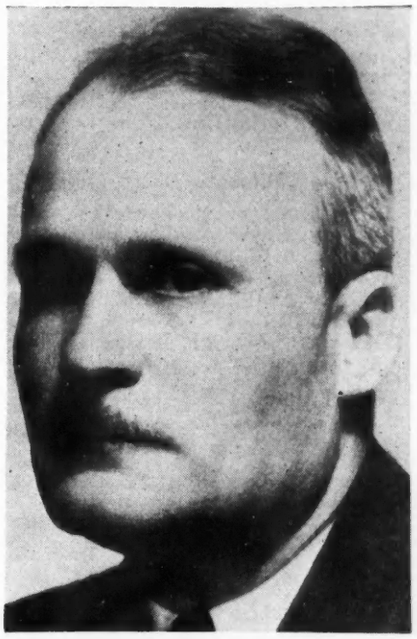
G. J. Goodson, Mid-Continent Manager, Bradford Motor Works, Tulsa, is completing a business trip through East Texas, Louisiana and the Gulf Coast.

Armstrong Leaves Mexico to be Texas Steel Vice President

A. J. Armstrong, secretary of the Association of Producers of Petroleum in Mexico since 1927, has resigned and will leave Mexico City to become vice president of Texas Steel Company in charge of oil field sales and activities, effective August 1. He will headquarter in Fort Worth.

Armstrong's Career in the oil industry dates back to the boom days of Desdemona. He left there in 1920 to join the Mexican Gulf Oil Company at Tampico and stayed with that organization to eventually become district superintendent on the Isthmus of Tehuantepec. For the past five years Armstrong has served on the boards of the National Employers Association of Mexico and of the Confederacion de Camaras Industriales, roughly analogous to the United States Chamber of Commerce in this country.

In 1928 he organized the Industrial Chamber of Tampico, a legal entity made up largely of oil companies not members of the Association of Producers of Petroleum in Mexico, but, in a sense, affiliated with that association. In addition to his work in Mexico in the interest of the oil companies, Armstrong represented the Third National Highway Congress on the Permanent Highway Commission of Mexico and took part in the First National Convention of Industrial Law. He has written several articles and brochures on Mexican industrial and social subjects.



A. J. ARMSTRONG

Returns from Mexico to join Texas Steel Company at Fort Worth.

Executives and employees in the Cayuga and Long Lake (Texas) division of Tide Water Associated Oil Company and Texas Seaboard Oil Company shown at a gathering at Cayuga. Sandwiches and refreshments were served to them by Black, Sivalls & Bryson Company and T. T. Word Supply Company.

Motion Pictures Featured At Houston Oil Show

Motion pictures depicting all phases of petroleum operations and including the methods used in many foreign fields will be shown daily at the Oil-World Exposition to be held in Houston from October 11 to 16. These pictures will be of such a variety as to interest men from all branches of the oil industry and will be entertaining as well as instructive.

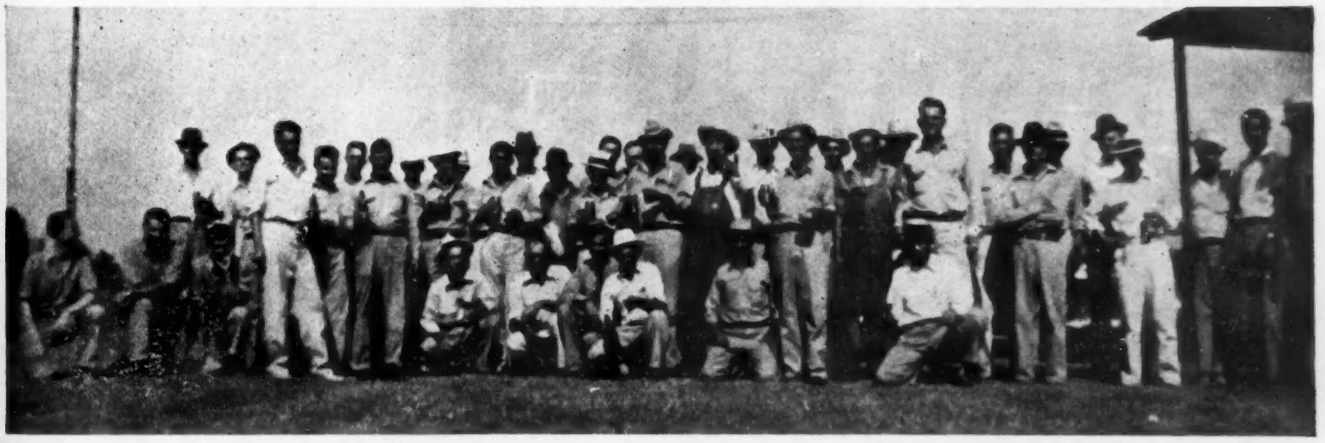
A number of technical films have been secured from various leading manufacturers of equipment and several complete films of particular interest have been obtained from the United States Bureau of Mines. These will all be shown in one of the projection rooms at the new exposition building which is especially equipped for the purpose.

One of the pictures is a three-reel film entitled "Through Oil Fields of Mexico" which was made in cooperation with the American Oil Company (Pan American Petroleum & Transport Company). In addition to the general views around the oil fields of Mexico, this film will show two of the world's best known wells—Potrero No. 4 and Dos Bocas. The former had an uncontrolled flow for about three months with part of the oil being saved by a dam built across the river. Although the picture will present many other such unusual conditions, it will also show the type of equipment used in Mexico, the laying of pipe lines, storage and refining processes. The shipment of oil via tank cars and tankers, the port facilities utilized and the arrival of oil in the United States will complete the picture of operations.

In a film entitled, "Refining the Crude," a four-reel picture made in connection with the Gulf Refining Company, the passage of crude from the field to its final refined products will be given in detail. This movie will include shots of various refining processes such as straight distillation, cracking, lube oil manufacturing, etc. In addition it will show laboratory work, safety, first-aid and fire fighting methods in vogue and will picture refinery operations up to and including the shipment of refined products to the consumer.

Another type picture will be one entitled, "Petroleum, the Liquid Mineral" made in cooperation with the Pure Oil Company. In four reels, the technique of oil production is outlined and the film shows method of exploration as well as drilling and production. Both cable and rotary tool operations are included. Methods of production are shown and include the manufacture of natural gasoline. The final scenes depict storage and transportation.

In addition to the moving pictures shown in projection rooms, many of the manufacturers have prepared films for continuous showing in their booths.



Squeaks from the Bull Wheel

Putting It Kindly

Clergyman: "About the milk you deliver here."

Milkman: "Yes, sir?"

Clergyman: "I just wanted you to know that I use it for drinking and not for christening."

Envy

"All my son does at college is have a good time."

"Are you sorry you sent him?"

"Well, no, I just regret that I didn't go myself."

In Time of Need

"Are you the game warden?"

"Yes, ma'am."

"Well, I am so thankful I have the right person at last! Would you mind suggesting some games suitable for a children's party?"

Explanation

I never could see why they always call a boat "she."

Have you ever tried to steer one?

In Training

"I'm surprised at you! Do you know what they do with boys who tell lies?"

"Yes, sir. When they get old enough the firm sends them out as salesmen."

Trained

"What's this big item on your expense account?"

"Oh, that's my hotel bill."

"Well, don't buy any more hotels."

Book Keeper

"My papa's a bookkeeper," said little Albert proudly.

"Yes, I know he is," replied little Dorothy. "He borrowed one from my papa."

California Lingo

The mistress of the house heard the bell ring and saw standing at the open front door a Chinese hawker. Quickly retreating, she called out to the maid:

"There's a Chinaman at the door. You go, Ella."

This was too much for the Chinese, who stuck his head into the hall and shouted indignantly:

"You go 'ella yourself!"

Preparedness

Cook: Did they say anything about the cooking?

New Maid: No, but I noticed them praying before they started eating.

Remedy

"Jane," said the lady to her servant, "you have broken more dishes and glasses than your wages amount to. What can be done to prevent this?"

"Well, mum," said Jane, "you might raise my wages."

Specialist

"What do you do for a living?"

"I paint men and women."

"Ah, a portrait painter."

"No, a specialist. I paint 'Men' on one door and 'Women' on the other."

No Difference

"Waiter! Did you bring me peach or apple pie?"

"Can't you tell from the taste?"

"No."

"Well, then, what difference does it make?"

Obviously

"How could you have the heart to swindle people who trusted in you?"

"But, parson, people who don't trust you cannot be swindled."

Jungle Remedy

Tramp: Kin you let me have a cake o' soap, mum?

Housewife: Do you mean to tell me that you really want some soap?

Tramp: Yes, mum. Me pardner's got the hiccups an' I want to scare him.

Selling

"To sell goods," said the salesman, "you must be a psychologist; you must be a psychic. Now I am a psychic. I can read the minds of men I call on; for instance, I know what's on your mind right now."

"Well, then," replied the victim, stifling a yawn, "why don't you go there?"

I See!

Why do you always insist on wearing that sweater?

I have three reasons.

Three reasons?

Yes, the first reason is it's more comfortable—

And the other two reasons are obvious. I see! I see!

In Difficulties

"Sound off!"

"Midshipman McTavish, Fourth Class, sir!"

"Why were you late to formation?"

"I squeezed out too much toothpaste and had a hard time getting it back in the tube, sir."

Following Instructions

"Great Scott!" said Mr. Newlywed, seeing broken crockery all over the floor. "Whatever has happened?"

Mrs. Newlywed explained: "This cookery book says that an old cup without a handle will do for measuring—and it's taken me eleven tries to get a handle off without breaking the cup."

Knock, Knock

"When my wife needs money she calls me handsome."

"Handsome?"

"Yeah: Handsome over."

Operations

"Last summer I had my hand taken off at the wrist—by an ax."

"That's nothing. Last night I had my hand taken off at the knee—by a woman."

In the Dark

"Who dat?"

"Who dat say who dat?"

"Who dat say who dat evy time I say who dat?"

Specific

Hotel Page—"Telegram for Mr. Neidspondiavanci, telegram for Mr. Neidspondiavanci!"

Mr. Neidspondiavanci—"What initial, please?"

JENSEN JACKS
(see opposite page)
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